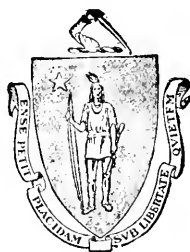


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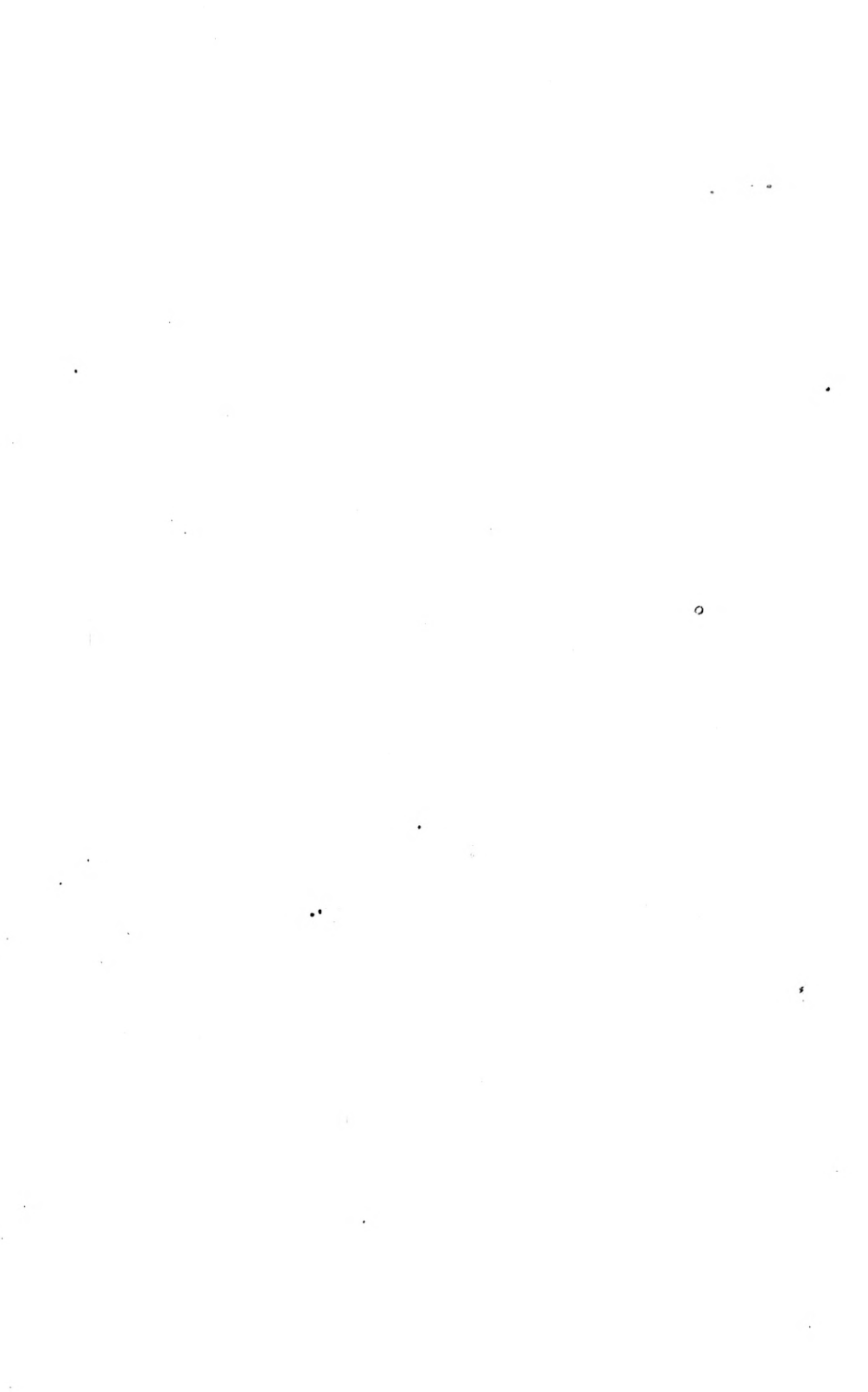
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1903

v. 16



Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of *Sections*—polished on both sides. Satisfaction guaranteed on a full line of *Supplies*. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

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Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,
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Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight.

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Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

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use **Root's Goods**. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

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Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold. Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

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Untested queens from these races, 3- and 5-banded Italians, Cyprians, Albino and Holylands; bred in their purity from 5 to 20 miles apart. February and March, \$1.00 each, or \$9.00 per doz. All other months, 75c each; \$4.25 for six; or \$8.00 per doz. Tested queens from \$1.50 to \$3.00 each. Breeders, from \$2.00 to \$10.00 each. Nuclei and bees by the pound a specialty. Price list free. WILLIE ATCHLEY, Beeville, Tex.

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Of Bee Hives, and all kinds of bee supplies as well as consumers, will find it to their interest to let me know their needs. I sell to the jobbing trade all over the world. I have financial interests and business contracts with two of the largest factories in the United States, as well as being sole proprietor of a small plant of my own. One of my factories is cutting 12,000,000 feet of lumber this year. I want your business. Address, for a catalogue,

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Please mention the Review.

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Although the price of these queens is \$1.50 each, I have never been able to keep up with the orders. Most of my customers wait until spring before sending in their orders, and then have to wait from four to eight weeks. A few are far-sighted enough to send in their orders in the fall or winter, and these get their queens in May or June, in time to be of some service to them the same year. Send \$1.50 now and I'll book your order, and you will get your queen early next spring.

The price of a queen alone is \$1.50, but I sell one queen and the Review one year for only \$2.00. When you send in your renewal to the Review, send another \$1.00 (\$2.00 in all) and your subscription will be put ahead one year and your order booked for a queen next spring.

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Everything about the BLOCH makes it the best go-cart to buy. It is the most modern, and easily adjusted, it is the best built, and most beautiful. Send for book B of pictures and prices.

We pay freight on go-carts, baby-carriages, and invalid chairs all over the United States.

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Only exclusive bee-supply house in Ind.

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BUY A BUZZ - SAW,

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

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I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

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Bee - Keepers

Will save money by
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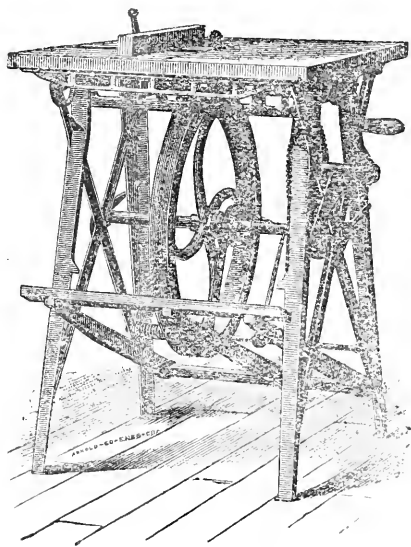
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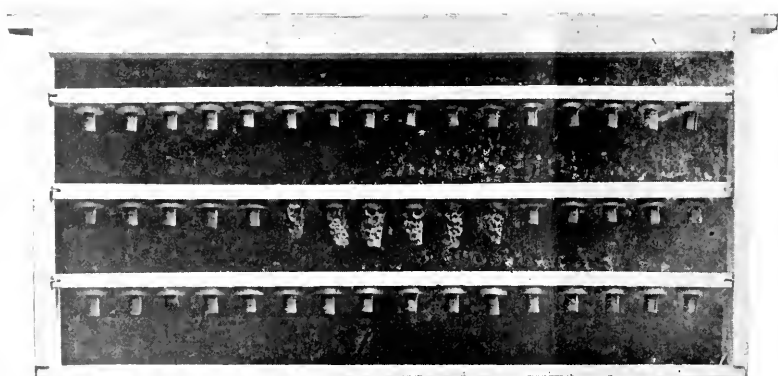
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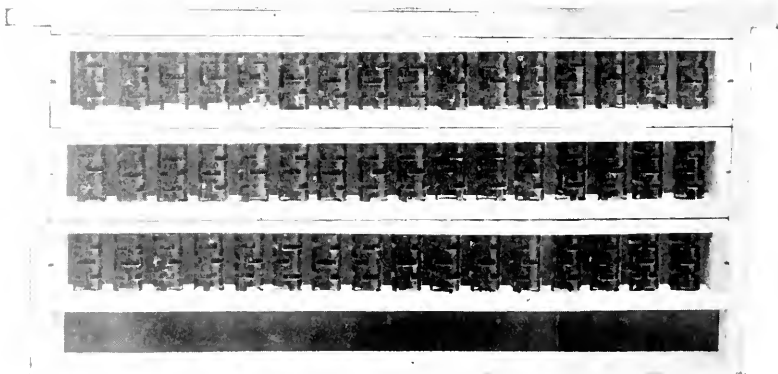
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CELL-CUPS AND FINISHED GELS.



CAGES OF QUEEN-EXCLUDING METAL.

STANLEY QUEEN INCUBATOR AND BROODER.

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The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL. XVI. FLINT, MICHIGAN, JAN. 10, 1903. NO. 1.

QUEEN INGUBATOR AND BROODER.

BY W. Z. HUTCHINSON.

An Arrangement that Allows the Bees Access to the
Cells and Queens at all Times.

One of the greatest objections urged against a lamp nursery, or any kind of a nursery where queens are hatched away from the bees, is that the cells and their inmates are robbed of the actual care of the bees. When the bees have access to a cell, and the time approaches for the queen to emerge, the wax over the point is pared down, and, as the queen cuts an opening through the cell, and thrusts out her tongue, she is fed and cheered in her efforts to leave the cell. A queen hatched away from the bees loses all of this food, cheer and comradeship; and, until introduced to a nucleus, or full colony, has not the natural food that she would secure were she among the bees.

All of these objections are overcome by an invention of Mr. Arthur Stanley, of Dixon, Illinois. Mr. Stanley makes the cell-cups according to the directions given in Mr. Doolittle's

Scientific Queen Rearing, sticking the base of each cell to a No. 12 gun wad.

By the use of melted wax, these wads, with the cells attached, are stuck, at proper intervals, to a strip of wood exactly the length of the inside width of a Langstroth brood-frame. Two wire staples driven into the inside of each end-bar, slide into slots cut in the ends of the cell-bars, and hold them in position.

The process of transferring larvae to the cells, getting the cells built, etc., have all been described in the books and journals, and need not be repeated here. When the cells are sealed they may be picked off the bar (still attached to the gun wads); and right here is where the special features of the Stanley process steps in. Each cell, as it is removed, is slipped into a little cylindrical cage, made of queen-excluding zinc, the cage being about two inches long, and of such a diamet-

er that the gun-wad fits snugly, thus holding the cell in place and stopping up that end of the cage. The other end of the cage is plugged up with a gun-wad. Long rows of these cages, filled with sealed cells, are placed between two wooden strips that fit in between the end-bars of a Langstroth frame, and are held in position by wire staples that fit into slots cut in the ends of the strips. To hold the cages in their places, holes, a trifle larger than the diameter of the cage, are bored, at proper intervals, through the upper strip, thus allowing the cages to be slipped down through the upper bar, until their lower ends rest in corresponding holes bored part way through the lower bar.

A frame full of these cages, stocked with cells, may be hung in a queenless colony, and will require no attention whatever, except to remove the queens as they are needed. The

workers can freely pass into and through the cages, cluster upon the cells, care for them, and feed the queens after they hatch, exactly as well as though the queens were uncaged.

These cages are unsurpassed as introducing cages; either for fertile or for virgin queens. The bees are not inclined to attack a queen in a cage to which they can enter, yet they can surround, caress and feed her. They can become acquainted with her, and give her the same scent as themselves. When desirable to release her, one end of the cage can be stopped with candy, and the bees allowed to liberate her by eating it out.

By putting food in one end of the cage, a queen may be kept caged, away from the bees, the same as in any other cage.

Flint, Mich., Jan. 1, 1903.

ORGANIZATION IN CALIFORNIA.

BY F. E. BROWN.

A Well-Directed Commercial Effort for Co-operation With Good Men at its Head.

Organization is the watchword on the Pacific coast among the bee-keepers, and it behooves the committee of the National organizers to do fast work, or the local branches of the National Association will be far in advance of the mother-order.

Last week the writer went to Los Angeles to attend the California State Bee-Keepers' Association, and there was much enthusiasm along the line of National organization, and I can assure you that I did all I could to promote the National idea of marketing honey; and I wish to report that my time was not wasted. There was

a committee appointed at that convention to organize for the marketing of honey; this committee consists of L. E. Mercer, G. W. Brodbeck, M. H. Mendelson, J. F. McIntyre, Emerson Berts and F. E. Brown. This committee spent one day after the meeting adjourned, and effected one of the most substantial organizations ever effected on this coast.

A NATIONAL HONEY PRODUCERS' ORGANIZATION.

The name of the new organization is the California National Honey Producers' Association. It is a stock com-

pany, and the papers of incorporation are now pending—term of years fifty, with a capital stock at \$25,000. Each stand of bees is to represent a share of stock having a par value of five cents per share. This is so placed that it will not exclude any one from coming in. They are to have a board of five directors, who will elect and employ a general manager, whose duty will be to grade all honey, seal the same with a seal bearing the name of the National Association, which will guarantee to its consumers the pure article. After the honey is graded and sealed, it is never to be opened until opened for consumption. Any one who will buy a case of California honey whose seal has not been affixed, or if it has been broken, will, in the future, take the risk of getting what he orders; but, on the other hand, if the package that he orders bears the seal of the California National Honey Producers' Association, he can depend upon it that he has the genuine article. This should be encouraged everywhere; and let every locality so organize, but be sure to recognize the National Honey Producers' Association by leaving a place to "couple on" when the latter organization has been perfected.

A UNIQUE AND HANDY METHOD OF SAMPLING HONEY.

Grading rules will be discussed so that they will be uniform as nearly as is possible. When the official grader of the National Honey Producers' Association takes a sample out of a case of honey, this sample is then placed in a sample bottle, and the bottle is then placed in a hole that was previously bored in the center-piece of the shipping case, so that when there is any reason for sampling the honey in any case it will not be necessary to break the seal, simply lift the sample-bottle from the center-board.

I again suggest that every well-to-do bee-keeper, or any other bee-keeper of good standing in a community where there is no commercial organization, take the responsibility upon himself, and effect such an organization. The plan of the Colorado Honey Producers' Association is a good one; it is very much like ours of California, and, perhaps, the Colorado plan is better known than some other. Have a central place to transact the business, also a business manager to do the business, whose duty should be to grade, seal and sell all the products of its members except the honey sold at retail. All honey sold at retail, by any producer, will be free from any charge of the Association. And any member who can turn over to the manager of their local Association an order for a car of honey will receive a specified per cent of the sale of the same, up to the amount of his own product. This the local Association can just as well do as to pay it to some broker, and in this way the producer who now has a trade, and is selling by the carload lot, will retain his customers, and it will be made an object for him to do so. The same way with the retail man; he will not be called upon for a commission upon the honey that he sells in this way. By retail, I mean in lots less than carloads. So you will see that it encourages the selling of the honey by the members both in small and car lots, and at the same time it is the strictest kind of co-operation, and not competitive as we now have it.

A GIGANTIC BROKERAGE SYSTEM.

When the National Honey Producers' Association is fully organized it will be a gigantic brokerage system; one that will be perfectly safe and reliable; one in which all its goods will be of its own production and offered to the market from these local organ-

izations; in other words, these local organizations, which are now seeking a market for their honey, will then find this National Honey Producers' Association a channel in which to market their goods. A small commission will be paid to the National Honey Producers' Association, but will be very small, and smaller as the volume of the business increases.

The article published in the Bee-Keepers' Review for December of this year, by E. B. Tyrrell, has many points that are worthy of consideration; he mentions the necessity of competent organizers to work up the local organizations. This, I think, is well, and along this line I have worked, and have reached every convention possible. Co-operation and organization (of a National type) has been my hobby.

THE FIRST STEP IS TO ORGANIZE LOCAL ASSOCIATIONS.

But I can not see how it is going to be such a hard task, as Mr. Tyrrell seems to be impressed with, as when the plan is decided upon by the committee, and accepted by the National Bee-Keepers' Association, it will be a very easy matter to elect the proper officers, and then proceed to business;

while the honey that is now marketed by the local associations will not all be turned over to the National the first year, it will grow in favor year by year, until soon we will be in control of the entire output. The thing now to do is to effect the local orders everywhere, and as soon as the other part of the machinery is in working order, then couple on, and we are then one great train, loaded with the purest honey, that is so sealed that it can not be tampered with until it is in the home of the consumer, where we will unload, and load up out-cars with the gold that has here-to-fore gone to build up the palaces of the millionaire. Come along Brethren, don't be afraid of a good thing.

If it were possible for this committee on plans to get together, then some speedy work could be accomplished, the machinery could be set to work, and organizers could be placed in the field armed with definite plans, and we would be prepared to handle the coming crop. While this would call for some expenditure of money, it would be a saving of far more money, by controlling what will naturally be lost if we continue as we are another season.

Hanford, California, Dec. 23, 1902.

NATIONAL ORGANIZATION.

BY H. H. HYDE.

Some Difficulties in the way of its Accomplishment on a Commercial Basis.

I have read, with some interest, the late discussions on a National Honey Producers' Association. On account of the magnitude of the proposed undertaking, I have given it deep study, and have formed some conclusions as

to the difficulties in the way, which I will proceed to mention.

First, I think that bee-keepers, as a rule, will be slow to enter the combine; and I feel sure that a great many will never join. Second, there

are dishonest men in every calling, and bee-keeping is no exception to the rule. There will be those that will not tote fair with the organization; they will not only grade dishonestly, but will be on the "beat" in every way they can. Third, there are always some professional grumblers who take delight in picking a flaw, and in causing trouble in general, and it is from this latter class that I expect the combine will suffer most. Fourth, we must consider the great cost of operation; for the saving to the bee-keepers must be great to balance the cost in salaried officers, fine offices, office fixtures and expenses, and the cost of traveling salesmen. These things must not be overlooked or bee-keepers may get themselves in a hole that it will be hard to get out off. Fifth, if the combine is to succeed, it must do away entirely with wholesale dealers in honey, and must sell to the retail merchants entirely. They must do this if they expect to make a solid showing; for, at present, the bee-keepers sell largely to wholesalers, and, if the combine should continue to so sell, there would simply be another added cost—that of the expense of the combine.

SHIPMENTS OF HONEY MUST BE DIRECT FROM PRODUCER TO PURCHASER.

From personal experience as a large buyer and shipper, I know that if the combine is to succeed it must make all shipments direct from the producing point to the buyer; for success cannot be attained by paying freight from the local producing point to the central office, and then paying freight again to the selling point. Another thing, by shipping direct, no large warehouses will be needed, and the combine will not be out insurance money.

TEXAS WILL PRODUCE "BULK COMB HONEY" REGARDLESS OF WHAT THE "COMBINE" MAY THINK OR WISH.

Then I fancy that the first thing the combine would undertake to do would be to make a demand that the South-western producers quit putting up bulk comb, and go back to section and extracted honey, and, at the same time, would endeavor to quash the demand for bulk comb; which is steadily growing, and which Texas alone, although producing from 200 to 300 hundred cars each year, is no longer able to supply. If the present demand keeps up, it can only be supplied by shipping honey from other states. Bulk comb is now the honey almost invariably called for in Texas, Oklahoma and Indian Territory, and I understand that the demand has gone into Kansas and Utah. Now, if the combine should ever expect to control the output of the Texans, it must look with favor on bulk comb honey, and must do all in its power to give it an equal showing in Texas and the Territories named. This honey is now shipped in retail packages direct from producer to retailer; and in this method of disposing of honey Texas may fairly claim to be ahead of all others. Our honey is now packed in retail packages, labeled, and shipped direct from producing point to the retailer and there is only one profit from producer to retailer, and that is the profit of the wholesale dealer in South-west Texas; and it is my honest opinion that he is in a position to pay the bee-keepers a better price than the combine could net them on their honey, if sold by the combine.

Then, again, Texas is ahead, in that the bulk of the honey is sold as fast as it comes off the hives; many times the orders are in, weeks in advance, so that by the end of the honey season, in July, every pound of honey has been taken, shipped, and the producer

has his money. Therefore, if the combine is to succeed, it must knock out the wholesaler, sell to retailers only, pack its honey in retail packages, and make shipments direct from producer to retailer.

TWO HELPFUL, LEGITIMATE FIELDS OF LABOR FOR THE NATIONAL.

There are, however, two fields in which I believe a National organization may legitimately and profitably labor. First, and most important, I think, is the manufacture of cans of different sizes and kinds to meet the demands of the retailers. I believe that with enough money to put up a first-class plant (unless the tinplate trust sat down on it) it ought to be able to sell cans to the bee-keepers at quite a reduction from the present American Can Company prices.

Another important line in which the National Association might engage is

the gathering of honey crop reports, and publishing the same to the bee-keepers, thus giving them a guide to go by in setting their prices, and even making suggestions as to what the ruling prices ought to be. Work in this line would be of great benefit to bee-keepers, and is one in which a National organization could very profitably engage. Then there might be a third work for an organization, and that would be getting out a suitable trade-mark and allowing of its use by all honest producers.

Now, bee-keeping friends, if a National organization, or combine, as planned, can be made to work, the writer and the company he represents will be glad to join in and say hurrah for the combine; but it is my sincere belief after studying the matter carefully, that the combine will not succeed very well when it comes to controlling the honey business.

Floresville, Texas, Nov. 28, 1902.

CAUSES OF PEAR BLIGHT.

BY J. E. JOHNSON.

Superabundance of Sap Caused by Heavy Manuring and
Rich Soil the Chief Cause. Bees Seldom Spread it.

In the American Bee Journal for October 16, 1902, page 664, Prof. A. J. Cook quotes Prof. Waite as having proven beyond doubt, that bees are the chief agents in spreading pear blight. Now, I have always thought very highly of Prof. Cook, and we all know him to be one of the brightest and best informed professors, and his honesty is above question, yet it is possible for the wisest men to be mistaken. Now, in all kindness, I wish to ask Prof. Cook if he has thought of

the harm he may do to thousands of happy homes by holding that bees are the principal agents in spreading pear blight? The pear men of California look to him as an authority, and may carry things much further than he thinks.

My experience in pear-growing began many years ago. I have visited many orchards, have read nearly everything I could find on the subject of pear culture, and I know the experience of nearly every pear grower

of much note. I will now make a few statements that can be proved by my experience and observation.

DEDUCTIONS FROM YEARS OF EXPERIENCE.

First, pear blight is a bacterial disease of the sap, originating from an over-supply causing an action similar to fermentation. When once started, it is contagious, being carried in the air by the wind, the same as are some other diseases.

Second, some varieties of pears, if rightly managed, can be made practically proof against blight, even though the disease is near.

Third, some varieties, like the Bartlett, Laconte or Idaho, will blight anywhere, in any soil, with any size of trees, even when there is no blight near for the bees to spread.

Fourth, that if fertilized abundantly with barnyard, or other vegetable or animal manure, or planted in very rich soil, any variety may blight, bees or no bees.

Fifth, that a little, two-foot Bartlett tree, that has never had a blossom nor a bee upon it, nor been near blight, is just as likely to blight as though large and full of bloom; that is, in proportion to its size, or amount of new growth.

Sixth, that if the orchardist will plant only those varieties that are the least likely to blight, and in the right soil, giving proper treatment, he can control blight, bees or no bees.

Seventh, if it were not for the bees, or other pollen-carrying insects, the pear, more than any other tree-fruit, would be a failure, as its blossoms are not as easily wind-fertilized as are those of other tree-fruits.

Eighth, that to poison every bee or pollen-carrying insect, would be as disastrous to the pear-grower, as to the bee-keeper.

Go where you will, and, if you find fruit, you will also find bees, or other pollen-carrying insects. Pear trees blight because man has taken them from their natural home. If he will aid nature, she will respond by producing varieties that will be at home in either California or Illinois. Some seedlings from the West are not so likely to blight, as they have taken one step towards becoming naturalized.

THE EFFECT OF SOIL.

Four years ago I planted an orchard of pears on land that I considered very suitable, viz., a high clay. I now have 900 trees, and the only blight that I have seen was one little twig, the first year, on a little Graber. I cut off this twig, six or eight inches below the blight, burned it, and I have not had one single twig of blight since. I have mostly Keiffer and Graber, a few Lincolns, with some Dutchess dwarfs and a few Tryon and Wilder dwarfs, as I have found these less likely to blight when grown on the quince. I do not advise any one to plant dwarfs, however, unless it is the Dutchess, as the wind will blow them over unless they are protected from storms.

I do not manure, except to mulch a little with straw the first year, if the season is dry. I plant small trees. I cut them back every spring and cultivate until July; but think I will seed to clover soon. I shall apply wood ashes and bone meal when I think that the trees require it.

There is another pear grower near here who has several hundred trees, and he make the mistake of placing them on richer ground, and of planting all kinds of trees, with Bartletts and Lecontes scattered here and there. Blight has this year nearly ruined his orchard — Keiffers and everything. There are Keiffers 160 rods from my orchard that are dead from blight.

They were heavily manured. Heavy manuring will cause any tree to blight; and, when once started, it will quickly spread unless cut out; and it will spread just the same if there is not a blossom in the orchard. I have watched carefully, and I have never seen a bee visit a pear tree when it was not in bloom. I don't believe they visit leaf buds. In Mr. Brown's report before the Denver convention, he says that the trees covered with netting were also blighted.

So far I have proven the correctness of my theory, by my experience, and my orchard is the wonder of the community.

In conclusion, I would say that neither the climate nor the soil of California are adapted to pear growing, yet men have rushed into it on a large scale, planting Bartlett's, which are the worst blighters in existence. The remedy is to exterminate the blighters and then care for the others properly.

Williamsfield, Ills., Nov. 15, 1902.

SHOOK SWARMING.

BY GEO. SHIBER.

What to do with the Brood, and what to do with the Combs after the Brood is Hatched.

I notice in your comments on my article from Gleanings, on the subject of shook, or brushed, swarms, you leave the question open as to what to do with the surplus combs. The disposition of them until after the brood hatches and the honey flow is over, is an easy matter. But I suppose, after that, is where you left the question open.

COMBS ARE BUILT AT A PROFIT.

First, let me lay down the premise that combs built from starters, whether by natural or by brushed swarms, are always built at a profit. I am sure of this. This is the same logic that you have used so strenuously for so many years, Mr. Editor, and I think that this statement can almost, if not quite, be laid down as a maxim in bee-keeping.

I am now talking about comb honey production. The question will be asked, what will be done with the surplus combs? For one thing, they may be sorted over, rendering the poorest ones into wax. In cutting out the

combs, about an inch and a half of the comb should be left attached to the top-bars, thus making ideal starters for new swarms to work on. I would rather have them than to have foundation, for, with the comb starters, no pollen is put into the sections. The wax secured by this method is quite an item, and the stock of combs is continuously being improved without any cost for foundation to use in the brood-frames.

GETTING QUEENS FOR THE INCREASE.

Another thing that has not been touched upon in the shook swarm discussion, is where to get the queens for the increase. Dr. Miller, in a "stray straw," in Gleanings, spoke of a plan which I have practiced, and that is to rear queens from the best honey gatherers, and have cells ready for the old combs of brood, and the bees, at the right time. I have read all of the talk about the superiority of "swarming-queens," but I believe that the ones reared "by hand" are every bit as good. But that will make

no difference as to their swarming, for when the conditions are right for swarming, they will swarm.

In my humble opinion, this task of breeding a non-swarming strain of bees is a delusion. The most profit in bees comes from gratifying the swarming-desire so that it will work to our advantage. After a colony has commenced queen cells the bees usually slack up in storing honey in the sections. If, at this juncture, the bees are shaken into a new hive furnished with starters, the old hive set at one side, or on top, they will commence to do business with a vengeance. Draining the old colony of every bee will work to the profit of the swarm.

Older readers of the journals will remember that Mr. Heddon, in describing his "new method" of trans-

ferring, which is practically the same as "shook-swarming," said: "If there is any nectar in the fields, this colony will show you comb honey."

Colonies in box hives can be "shook" about swarming time, and treated the same as in frame hives.

NO DANGER OF SHAKING OFF TOO MANY BEES.

The question as to how many bees to leave on the old combs of brood is not important; only do not leave too many. If not enough are left, some brood may perish, but what of that? It's no loss whatever. At this time of the year we are after comb honey, not a surplus of bees, and if a little brood does die, the old colony will still be left strong enough for winter.

Franklinville, N. Y., Nov. 15, 1902.

THE DEALER'S RIGHTS.

BY J. E. HAND.

Do they Include that of Erasing the Producer's Name
and Putting on his own?

Editor Review:—I notice what you and Mr. York say, on page 343, about the producer's name on comb honey. I know there are some buyers who object to the producer's name and address on comb honey packages, simply because they want to run the whole thing themselves. If the producer or manufacturer of an article has not the right to have his name on it, I want to know who has? Surely not the middleman, who only buys it of the producer to sell again. How is a honey producer going to advertise his business, and work up a trade for his product if he is not allowed to place his name on his honey? It has taken me years to learn how to produce a

real fancy article of comb honey, and I would be very foolish to give to Mr. York, or anyone else, the benefit of my experience, simply because he happens to buy my honey. He has the right to place his name on the package as the seller of it, but not as the producer, as this would simply be lying, and an injustice to the producer. I would not sell a pound of honey to any man who would object to my name and address somewhere, either outside or inside of every case, and always outside of every crate. Anyone who is smart enough to produce a fancy article of comb honey should be smart enough to sell it himself without giving his dearly bought ex-

perlerce to some one who could not produce a pound of honey to save his life.

Wakeman, Ohio, Nov. 26, 1902.

[Like many other questions, this one has two sides to it. If I were at work building up a trade here in Flint for honey, I should wish to have my name on every package, and not that of the producer. That would be a natural feeling. If I spent time, and money, and thought, and energy, building up a market for honey, I should wish to reap the reward. I should not advertise that I was the producer of the honey that I sold. I should impress upon my customers the idea that I was an expert judge of honey, and took great pains to secure that which was of excellent quality and absolutely pure. I should take great pains to live up to my professions, and always furnish an excellent article, and thus lead my customers to believe that when they bought a bottle of honey, or a section of honey, with my name on it, they could rest assured that it had my guarantee, and that it was all right. If I should send out honey having upon the packages only the names of the different producers of whom I bought honey, I would never succeed in building up a demand for the honey that I sold. One day I might be selling Smith's honey, the next day, Brown's, and so on.

I do not blame any one for wishing to establish a reputation for the honey that he produces. That is entirely proper, and there are many retail dealers, and possibly some wholesalers, who have no objection to the appearance of the producer's name upon the packages. If they have really nice honey to sell that is about all they care. They are not trying to build up any special trade in honey any more than in many other commodities. It is to such men that I would sell my honey

if I wished to have my name appear on the packages. I should not sell to such men as Mr. York, who are striving to build up a special trade in honey. For these men there is plenty of honey in the market produced by men who never put their name on their packages, and don't care to do so. Their business is that of producing, and they pay no attention whatever to building up a retail trade. When their crop is off the hives they send it off to the commission man, or the jobber, and pay no more attention to the matter. Whether this is a good business policy or not is an open question. Probably it depends upon circumstances. In some instances, I think it is.

By the way, there was an amusing little incident happened at the Chicago convention. Mr. Frank B. White, former editor or manager of the paper called *Agricultural Advertising*, honored us with a call, and, upon invitation, addressed the convention. The burden of his remarks, as might have been expected from an advertising man, was of the energetic manner in which he would push the sale of honey, how he would advertise it if he were a producer. He would have his name and address stamped upon every package of honey that left his establishment. Nudges and winks were passed around, and every one who could catch Bro. York's eye gave him a smile full of meaning. Finally, some one asked Mr. White what he would do if the dealer should persist in scratching off his name from the section. "I would burn it in, so he couldn't scratch it off," was the reply. At this the whole convention roared. Mr. White looked a little confused. Evidently he didn't see where the laugh came in, but Bro. York did, and, as Mr. White left the platform, Mr. York said: "It is evident that I didn't tell Mr. White what to say."—ED REVIEW.]

Editorial

Gleanings for January 1st comes out with a new design for its front cover page. In the center is an elliptical opening in which, very appropriately, is printed the list of contents for the current issue.

Mr. Morley Pettit, of Belmont, Ontario, is the gentleman to whom the Review readers are to be properly grateful for the items in this issue regarding what was said and done at the Ontario convention recently held at Barrie.

F. Greiner says, in the American Bee Keeper, that many times those who can write or make a good speech, are unsuccessful in their business; and those who are successful cannot write. When these two classes meet, as at a convention, both are benefited.

Out-apiaries, short-cuts, and little skilled labor outside the bee-keeper himself, were the methods advocated by Mr. F. J. Miller, at the Ontario convention, for getting the most money with the least labor. Mr. Miller practices what he preaches.

A heavy mustache is something of an obstruction when eating honey on bread. Over at the Ontario convention, the recommendation was to have No. 1 Canadian honey, then turn the slice of bread upside down, or else stand on your head.

When cellar feeding of bees is necessary, a cake of candy over the frames absorbs moisture from the cluster fast enough to liquefy it for the bees, and the act of absorbing also dries the

bees. A flat feeding-pan, shallow enough to push in on the bottom board under the cluster, was recommended at the Ontario convention.

A Honey Exchange was formed over in Canada at the late convention at Barrie. It has a board of five directors, and H. G. Sibbald, of Claude, was elected General Manager. Colorado, California and Ontario now have organizations for co-operation in marketing the honey of their members.

Marketing was the chief topic at the late Ontario convention. While there was much discussion regarding methods of management in the apiary, the question of paramount importance was that of marketing honey to the best advantage, both in the home and foreign markets. The bee-keeping world is evidently waking up to the fact that there is a business end to bee-keeping.

There is a division of opinion on the advantages or disadvantages of wiring frames for foundation. Some of Canada's most successful bee-men at the Ontario convention being on either side of the question. The best place to have foundation drawn out, said Morley Pettit, is in the super. If left until drawn out and filled with honey you have it built down solid to the bottom bar: a thing hard to obtain in the brood chamber. The super is partly filled with comb, and partly with foundation, and between comb and foundation he uses a thin dummy called a "Foundation Separator," which prevents any bulging of the comb over against the foundation.

On the question of selling honey, the pros and cons of granulated versus liquid honey were well worked over at the Ontario convention. Mr. Holtermann had met with good success in selling candied honey barrels. The honey, minus the barrel, is set up in a grocer's window, and sold out in small lots, wrapped in paper, like lard or butter. The novelty and cheapness of the package produce a very rapid sale.

"Forced Swarming" was voted a success at the Ontario convention by those who have tried it. One member, Mr. R. F. Holtermann, has practiced it, to a certain extent, for ten years. The conditions essential to success are:

1. A good honey-flow.
2. Preparations for swarming (queen cells with at least an egg).
3. Ample time given the bees to fill themselves before being shaken.

In short, make it as near like a natural swarm as possible.

For a bee cellar Mr. Morley Pettit, at the Ontario convention, voiced the sentiment of the majority of cellar-winterers present, when he stated that a uniform temperature of 41 degrees F. was just right. Every hive should have top packing (i. e., a chaff cushion) and upward ventilation, and be blocked up from the bottom-board at least three-eighths of an inch at the back. Moisture is considered essential; in fact, several were more afraid of a cellar being too dry than too wet.

With reference to cellar wintering, the idea of getting bees out for a cleansing flight, then back into the cellar again, met with general opposition at the Ontario convention. Mr. Pettit preferred to set them out in the latter part of March, or early in April, in a sheltered spot, give them good top

packing, and let them stay. Mr. Darling could see no advantage in waiting for a suitable day. When the time of year comes, set them out quietly some evening, and they will be all right until a suitable day for flying.

Weed-Process Foundation received some hauling over the coals at the Ontario convention. The verdict was that it is all right for the brood chamber when properly milled, and not stretched out of shape as to the cells; but, for sections, several members had found that the bees prefer old-process foundation, because the Weed-process makes the wax harder. On the other hand, it was suggested that this depends upon the wax used, wax from cappings being harder than that from old combs.

The character of the Review, what its editor is really trying to do, is something that has been touched upon editorially occasionally. The mission of the Review is not entirely that of teaching bee-keepers how to manipulate their bees, how to extract the honey, how to put together sections and fill them with foundation, etc. These things are important, and it is in the province of the bee journal to discuss them, but the Review wishes to do still more; to arouse its readers and set them to thinking; to encourage them; to teach them to take a broad view of things; to see beyond the petty details of manipulation. To show that some of its readers have caught its true spirit, I wish to give extracts from two letters recently received. In substance, one says:

"The editor of a bee journal ought to know that there is more in keeping bees than simply getting honey; more in life than making money; more in business than net returns; and more in a man than simply what he earns."

Another subscriber writes: "The Review has been to me the most helpful of any influence in my 40 years of life. It has gradually opened my eyes to the possibilities surrounding me. It has changed me from a soured and struggling ————— to a man with a definite purpose. Already I am enjoying tangible results. The November editorial (page 337) on the new era in bee-keeping that will be opened up by 'shook swarming' has placed my feet on solid ground."

MICHIGAN, STATE, BEE-KEEPERS'
CONVENTION.

The Michigan State Bee-Keepers' Association will hold its annual convention February 3rd and 4th, in the council rooms of the city hall at Lansing. The rooms are in the third story, back away from the noise of the street, yet they can be reached by the elevator.

Arrangements have been made at a nice, clean, hotel, the Wentworth House, only two blocks from the place of meeting, where bee-keepers will be accommodated at \$1.50 a day.

The Michigan State Dairymen will hold their convention at the Agricultural College, Lansing, on the same dates, as also will the State Veterinaries, thus enabling the members of all three societies to come at reduced rates. When buying your ticket you will pay full fare, and ask for a certificate "on account of Michigan Dairymen's Convention," as the Secretary of this convention is to sign the certificates for all three of the conventions. This certificate will enable you to go back at one-third fare.

The first session will be on the evening of the 3rd, when E. R. Root will show us "Bee-Keeping from the Atlantic to the Pacific, as Seen through the Camera and Stereopticon." This will consist of portraits of distinguish-

ed bee-keepers, of apiaries, hives, implements, methods, etc., all fully explained. A more enjoyable entertainment for a bee-keeper can not be imagined.

Mr. C. A. Huff, of Clayton, Michigan, who has been experimenting the past season with formalin for curing foul brood, has promised to be present. Messrs. Soper and Aspinwall, of Jackson, are not far away, and will probably be present. Mr. Aspinwall has kept about 70 colonies for the past ten years, without losing a colony in winter. He can tell us how he has prevented this loss; also how he prevents swarming. Mr. T. E. Bingham, who has been so successful wintering bees in a cellar built like a cistern, is also expected. Messrs. A. D. D. Wood and J. H. Larrabee both live at Lansing, and will help to make the meeting a success.

This is the first time that the convention has been held in the southern part of the State in several years, let us turn out and show our appreciation of the event.

W. Z. HUTCHINSON,
President.

A NEW EDITION OF THE A B C OF BEE
CULTURE.

A beautiful book lies upon my desk. It was written by A. I. Root and E. R. Root. The title is: "The A B C of Bee Culture." A year never goes by without bringing me a new edition of this great work. The enormous sale that it deservedly obtains, allows of the bringing out of frequent editions, and the opportunity thus afforded for revision is not neglected. If there is any book that is really up with the times, and keeps up with the times, it is the "A B C of Bee Culture." If there is one book that the bee-keeper, be he novice or professional, can't af-

ford to be without, it is this book. There is no point pertaining to bee culture, upon which this book does not give the latest, fullest and most reliable information—well illustrated when it is possible. As to some of the particulars of the latest revision, I cannot do better than to refer the reader to the advertisement on the back page of the Review, which I as fully endorse as though I had written it myself.



THE PERCENTAGE OF WATER IN HONEY.

Frank T. Shutt, M. G. F. I. C. chemist, Dominion Experimental Farm, Ottawa, outlined some important experiments which he has been conducting relative to the percentage of water in honey under various conditions. His first work was to lay the foundation for experiments by demonstrating that the method of determining the percentage of water in honey followed by other chemists who have published reports, is unreliable; because, to expose honey for a length of time to a very high temperature causes it to lose weight by decomposition of levulose, as well as by evaporation. This he explained to the Bee-Keepers' Association at Woodstock, Ontario, last year. The method which he adopted and found satisfactory is to expose the honey on sand or pumice for a length of time at a comparatively low temperature (60 degrees C.) and in a partial vacuum. He then experimented with honey from uncapped, partly capped, and capped comb, kept in glass stoppered and cheesecloth covered bottles in a dry, and in a moist, atmosphere. The results show that while honey in an ordinary atmosphere lost slightly, that kept in a saturated atmosphere gained considerably in weight, due to absorption of moisture. Where honey was exposed to a satur-

ated atmosphere the normal percentage of moisture (about 15 per cent) increased in one case to 31 per cent, and in another instance where the honey was exposed, in a flat dish, it increased to 48 per cent. Throughout the experiments, honey was found to have a great affinity for moisture. That from partly capped combs contains less water than from wholly uncapped, but more than that from wholly capped comb. The percentage also varies with the season. Honey containing more than the normal percentage of water not only is thin and unattractive, but readily ferments.

These results, together with the experience of our best bee-keepers, show that honey should not be extracted until it is all, or at least partly, capped. It should then be exposed as little as possible to the air; and, unless sealed perfectly, should be kept in a dry place. If these simple rules be followed it will keep indefinitely.



BUSY TIMES AT THE REVIEW-OFFICE— SOME CHANGES THAT HAVE BEEN MADE.

"Exceedingly busy," is the only way in which my life of the last few weeks can be properly described. We have been taking a stairway out of the office, and remodeling the latter to make room for a cylinder press. The basement has been remodeled, and an outdoor hatchway built, which allowed us to use the basement for a stock-room, and for setting up an engine, and putting in shafting for running the presses. This item is written with the noise of the puffy fussiness of a gasoline engine coming up through the floor, and the clank, clank, grind, grind, of two presses going on in the room where I write, yet I am like the editor that I once read about. Some one asked him if the noise of the

presses did not disturb him. "No," he replied, "that is sweetest music in my ears. What worries me is when I don't hear it." It may seem strange to some, but noise of this kind does not disturb me. Some of my best writing has been done on a railroad train. The monotonous noise acts as a curtain, shutting out all other distractions.

But to return to the busy times at the Review office. All of these changes came at the beginning of the year, when new subscribers, renewals, and discontinuances are coming in by the handfals at every mail. To crown all, almost every day brought three or four letters regarding the "election muddle," complaining of this or that, suggesting this or that, and asking advice regarding this or that point. When night came it required a pretty strong exertion of the will-power to leave a desk upon which lay from 200 to 300 unanswered letters, put aside the cares of the day, and go to bed and to sleep; but I did it time and again, knowing that I would be the gainer in the end, rather than to over-work. It is not very pleasant, however, nor conducive to business success, to receive a letter asking: "Why do I not receive a reply to my letter of a week or more ago?" If some of you have not received prompt replies, if this issue of the Review is not so strong as usual in the editorial department, if it is later than usual in reaching you, if it shows some imperfections in the presswork, you will know why; that some radical changes have been made. Once the Review was set up here at home, and the presswork done down town; now the type is set down town by machinery, and the presswork is done here at home. At present I am experiencing the pleasure of installing, comprehending, and learning the management of a gasoline engine and a

cylinder press. Have a little patience, and I promise you that, when we get things straightened out a little, the Review will be brighter and better, and out on time. Heretofore, I have often had to wait for the presswork to be done. We would work hard to catch up, and then, when a form would be taken down to be printed, we would find a "long run" on the press, and might be compelled to wait several days.

FOUL BROOD AND THE ONTARIO ACT.

The Ontario Foul Brood law was the first of its kind in America. Among other things, it imposes a fine of \$20 to \$50, or imprisonment for one or two months, for concealing the fact of the existence of the disease among one's bees. Anyone who is aware of the existence of foul brood among his own hives, or elsewhere, and does not notify the President of the Ontario Bee-Keepers' Association is liable for a fine of five dollars. At the recent Ontario convention, the President recommended that there be a sub-inspector in each district, so as to save traveling expenses incurred by one inspector going from one end of the province to the other.

Inspector McEvoy, by request, repeated to the convention his well-known method of curing foul brood. That is, by twice shaking, first on starters, then on full sheets. He emphasized the necessity of doing this during a good honey flow—not in fruit bloom for fear of a sudden cessation of flow and consequent dead brood, and in the evening. If done in the morning the bees are liable to swarm out and take their diseased honey into some other colony. To dispose of the brood, leave some bees with it, pile it up for 10 or 12 days, or until most of the brood is hatched, treat for foul brood again, and give the bees a

queen. It would not do to wait 21 days, for all the brood to hatch, as then the honey flow might be ended.

HOW RELIABLE CROP REPORTS MAY AID THE BEE-KEEPER.

Over at the Ontario convention, the President, Mr. J. D. Evans, pointed out that one of the lessons we have learned is that there is never a good crop in all parts of Ontario in any one year; and any apiarist who has a large crop of honey should make inquiries as to the honey yield in the whole Province before coming to the conclusion that it is abundant, and going to be cheap. The importance of correct information on this point, and the influence of the Association in keeping up fair prices was well illustrated in the disaster that befell the attempt of certain commission men in Toronto to break the honey market last fall. In this connection he invited the thanks of the Association to Mr. Byer, of Markham, for his prompt and energetic action in the case.

The Canadian Bee Journal, the organ of the Association, publishes crop reports and so keeps the members informed. The trouble lies with men who think to save money by staying out of the Association, and not taking the Journal.

The directors of the Association have done good work by sending in estimates of the amount of honey in their several districts, but care should be taken not to let reports be gathered only from best bee-keepers. They should not only show the total amount of honey, but the relative aggregate as compared with former years; and, as far as possible, with the probable demand.

In a paper on Market or Crop Reports Mr. J. L. Byer warned bee-keepers against allowing exaggerated or misleading reports of their crops

to get into the news columns of the daily and weekly press. A racy item stating that such a bee-keeper has so many tons of honey, while perhaps not very much exaggerated, will cause a general impression that honey is very plentiful, and ought to be exceedingly cheap.

Then we should be careful what reports we send to dealers. While they need to know the probable output before they can undertake to handle our honey, it is not only suicide but fratricide for the man who happens to have a good crop to boast of it to all the dealers he knows. As one member shrewdly represented it, we should not enlarge on the fact of a good crop nor conceal a failure.

RESULTS OF THE ELECTION.

In the election for General Manager, 610 votes were cast, of which N. E. France received 489; E. T. Abbott, 117; scattering, 4. Mr. France has thereby been declared elected.

The whole number of votes cast for directors was 567, of which G. M. Doolittle received 364; W. F. Marks, 262; Thos. G. Newman, 249; Udo Toepperwein, 149; Wm. A. Selser, 105; Wm. McEvoy, 106; G. W. VanGundy, 74. The rest of the votes were scattered among 120 members, no one of them receiving more than 32 votes. Mr. Doolittle, having received a majority vote, has been declared elected as a Director. No other candidate for Director having received a majority vote, as required by the constitution, no other is elected. The constitution says that the Directors' term of office shall be "four years, or until their successors shall be elected and qualified." Thus Mr. Marks and Mr. Newman retain their offices, at least for the present.

Considerable dissatisfaction and surprise have been expressed because the

name of only one candidate appeared upon the ballot, and because the amendments proposed at the Denver convention were not presented for a vote upon their adoption. I wrote to Mr. Secor in regard to the matter and here is his reply:

Forest City, Iowa, Jan. 5, 1902.

W. Z. Hutchinson, Pres. Nat. Bee-Keepers' Association, Flint, Mich.

My Dear Sir:—I have your recent letter in which you state that there is some dissatisfaction among some of the members of the Association in regard to the form of the ballot recently sent out, and because there were no constitutional amendments submitted.

I am sure that any fair-minded member, when he learns the facts in the case, will exonerate the General Manager from blame in both cases.

The reason why Mr. France's name was mentioned on the voting blank was that he was the only person nominated in a proper manner. His name had been regularly presented to the chairman of the board and seconded by at least half a dozen members. It therefore came to me officially, and I was obliged to notice it.

It may be said that other names were mentioned through the bee journals.

Granted. I now think I remember one person who nominated three or four members for the same office in this manner. By what constitutional provision is the board of directors, or the General Manager required to take cognizance of every suggestion that every person may write to periodicals published in the United States?

Why were not these nominations made to the proper officials of the Association?

Unless these matters are brought to me officially, I cannot take the responsibility of endorsing them.

Now, as to the constitutional amendment offered at the Denver convention.

How could I submit so important a matter as that to a vote without a word from the Secretary? In fact, I never saw a copy of them until after the voting blanks had been sent out, and then only a stenographer's report of them.

Dr. Mason wrote me, just before his death, that he had no copy of the proposed amendments, that they had never been turned over to him. If the Secretary of the Association could not certify what the proposed amendments were, how could I be expected to take the responsibility of interpreting them?

I said before, and now repeat, that I did not see even a purported copy of the amendments till after the voting blanks had been printed and mailed.

If we do not wish to be governed by constitutional authority, why have a constitution?

If we do not practice business methods, and follow parliamentary usages, our Association is but a rope of sand and not worth saving.

I hope soon to turn over to my successor the records and funds of the largest and most prosperous Bee-Keepers' Association in the world; and if we will stop our quibbling about unimportant matters, and put our shoulders to the wheel in the spirit of fraternal helpfulness, the future of the Association will be brighter than ever, but if factionalism and love of office prevail, it will be rent in twain and die a premature death.

Sincerely yours,

EUGENE SECOR,

General Manager."

Mr. Secor advises me that a copy of the foregoing has been sent to the members of the board of directors. He also authorized me to give it out for publication if I thought best.

NOMINATIONS AT CONVENTIONS.

An Informal Ballot most Likely to Express
the true Wishes of the Meeting.

Ever since I can remember, the National Association of Bee-Keepers has elected its officers by first placing one or more nominees in the field, and then balloting to decide which nominee should have the office. At Denver, when this part of the program was reached, the Westerners objected. They were not accustomed to that style of making nominations. After the convention was over, Mr. F. L. Thompson wrote an article on the subject, which was published in the Rocky Mountain Bee Journal. The American Bee Journal copies the following paragraph:

"Mr. President, I nominate So-and-So for president," (or secretary or treasurer, as the case may be). No other nominations. "Mr. President, I move the secretary be instructed to cast the ballot of the association for So-and-So as president." Seconded and carried. So-and-So is then supposed to be the choice of the association.

"Perhaps he is; and perhaps he isn't."

Commenting upon the above, the American Bee Journal says:

"This seems to result in electing usually the first man named, whether the best man for the place or not. Instead of this we should have the very best man available for the place, and there should be full opportunity to have each member suggest the man he thinks thus fitted. As to the means of accomplishing this, Mr. Thompson says:

"There is only one way to do this, namely, by taking an informal ballot

before the decisive one, and doing away with verbal nominations altogether. The informal ballot is the best kind of nomination, because it is a nomination by everybody who has ideas of what he wants. Verbal nominations are made only by a few, who may not come near covering the field. After an informal ballot, every one knows clearly what to choose between: after a verbal nomination he is often not conscious of much more than the temporary and adventitious prominence of those actually named. One may very readily, for the time being, even forget the existence of as efficient workers (or even more efficient ones) as those who happened to be named."

"Entirely right, Mr. Thompson. The moment a name is mentioned on the floor of the convention, that moment the personal elements enters, and any one making a second nomination is likely to be considered more or less as antagonizing both the previous nominee and the man who nominated him. With the informal ballot all this is avoided. Then the formal ballot which follows is made intelligently.

"It may be objected that balloting takes time. If there is to be a very short session, there may be some weight in this. But with one or more sessions of considerable duration, a good presiding officer will expedite matters so as to save a good deal more time than that lost in balloting. At any rate, if we want the best of anything, we must be willing to pay something for it.

"Bee-keepers, perhaps, are not less informed on this subject than are other people. But, really, it was laughable to see how the election of officers was conducted at the Denver convention. We think it was the most poorly managed of anything we ever saw in that line. For instance, nominations of candidates was allowed

first, and then what was called an 'informal' ballot was taken! The informal ballot, as we understand it, is to take the place of public nominations. Then, afterward, the formal ballot is taken, which is to elect one from the persons nominated by the informal ballot.

"We do not believe in public nominations for office, nor in nominating committees. Neither method is fair. The informal ballot first is the best way, especially for important offices."

First allow me to say that I agree entirely with Mr. Thompson and the American Bee Journal in thinking that by the informal ballot is the right and proper way to make nominations. I also agree with Bro. York as to the ridiculous feature of the informal ballot following a public nomination as was the case at Denver. A little explanation, however, will show how it was brought about. First came the election of President. Dr. Mason nominated myself for re-election. Mr. Abbott followed with a nomination for Mr. J. U. Harris. Now, if we had gone on and balloted, as we have been in the habit of doing, there would have been nothing ridiculous about it. But right here a strong protest was raised against that method of making nominations. Of course, the President might have ruled that the election should be carried on under the old plan, and carried the point, unless the decision was reversed by a vote of the members, but, as the President had been nominated for re-election such action on his part would have been looked upon as decidedly unfair and selfish. There was only one thing to do under the circumstances, and that was to allow an informal ballot, even though it was a ridiculous farce. We have learned our lesson, and it is likely that, hereafter, nominations will be made by means of the informal ballot.

NATIONAL COMMERCIAL ORGANIZATION

It can be best Accomplished by First Establishing Local Organizations.

While on my way to the Chicago convention, I stopped off one day at Dowagiac, Michigan, and visited Mr. Heddon. It had been some three or four years since we had met, and there were many things for us to talk over. Mr. Heddon and his son, Charley, run a daily and a weekly paper and job office, and are also engaged in the manufacture of a fish-bait. Mr. Heddon still has his home-apiary, but says that of late years he cannot secure a good flow of honey. He has been in the bee business about 32 years. For the first 16 years he obtained good yields; for the last 16 the surplus crop has been light. He has tried different strains of bees without getting any light on the subject—none of them secure much honey. Mr. Heddon had thought of the fanciful theory that the bees had gathered the honey from the blossoms so many years in that vicinity, that possibly the earth had been sucked dry of its honey producing elements, but laid it aside, because the change had been so abrupt, and because others had kept bees longer in one locality than he had and still secured fair yields. He admitted that he was puzzled, especially as there were still as many bass-woods and fall flowers in his vicinity as when he first began to keep bees. Who can solve the puzzle?

Last spring Mr. Heddon made 1,200 fish-baits, thinking that he possibly might sell that many during the season. Before the season was over he had sold 6,000. During the evening that I was there, we had a call from

an agent, or, rather a manufacturer of fishing rods, and it was a real treat to hear Mr. Heddon and this man "talk fishing." Mr. Heddon has evidently studied fish and their habits, and the methods of taking them with artificial baits, just as he has studied bees and their habits. He and his son, Willie, are going to Florida this month to pass the rest of the winter, and will put in a good share of their time fishing and studying the habits of the fish of Florida.

But I am wandering, and I must come back to bees, and let the fish stories alone. The next morning I went over the different plans that have been proposed for National Commercial Organization. He thought the matter over for awhile, then said: "Hutch, I don't believe you'll make it work. The country is too large, there are too many bee-keepers, and they are too scattered. They are lacking, many of them, in business abilities. Ordinary bee-keepers have not had the business training that comes to the heads of manufacturing concerns that go into a trust. Any business concern that goes into combination with other like concerns is ready at all times to 'eat crow.' If a whole loaf cannot be secured, a half loaf is accepted. Let come what may, they all hang together. They keep up the combination. Bee-keepers won't do this. The moment that a man's honey isn't graded as he thinks it ought to be graded, the moment he does not get the returns to which he thinks he is entitled, out he goes."

I cited him the Colorado Honey Producers' Association. "Yes," he said, "the bee-keepers of a certain state or locality may band together, if there is any reason why they should, and make a success of it. California may form an association and make a success; so may Colorado; so may Canada; or New York; but when

you attempt to combine all of the bee-keepers of this country into one society, or have a central organization controlling the different local organizations, you are courting failure. There is always something going into the central organization, but nothing coming back."

I then asked him if the National Association might not aid in the way of gathering statistics, regarding both the crop and the markets. He thought it might possibly do this, but considered this to be a work that might better be carried on by the bee journals.

The Review wishes to be entirely fair, to give both sides of the subject, and, if it is really advisable to drop this idea of first starting a National, central organization, working up, instead, local organizations, like that of Colorado, then the sooner we know this the better. The Review is not yet ready to offer advice upon this subject, but, as being something in the line of Mr. Heddon's idea, it offers the following from the pen of Mr. F. L. Thompson, of Denver, Colorado, and published in the Progressive Bee-Keeper. Mr. Thompson says:

"In the November Review, just to hand, the first proposal of a form of by-laws, by Mr. F. E. Brown, for a National marketing organization is given. An article appears by Mr. E. A. Daggitt, going rather extensively into co-operation for farmers; and an article by Mr. W. A. H. Gilstrap follows on the necessity for and right of a honest trust. The Rocky Mountain Bee Journal is also going at the subject in the same devoted fashion. An article by Mr. Aikin in the November number merits attention.

The by-laws proposed by Mr. Brown were not intended to be published. I think it was a mistake to publish them. They are open to serious criticism, and will undoubtedly be greatly modified by the committee. Their

chief defect is that they commence work from the top down, whereas it should be done from the bottom up. The marketing associations already existing should form the nucleus of a National affair. They are in the business; they know what it is by experience. Then other local associations should be organized, and in their turn make their local requirements and experience the basis of their influence on the policy of a National marketing company. To do all this demands and requires that the National marketing board of directors should be made up of representatives, in the true business sense, of the local marketing associations. But the proposed by-laws would give us an external, foreign affair, with no particular hold on the confidence of producers. They would make the National marketing board a creature of the present National board of twelve directors. Now, who are those twelve directors? They are very good men, no doubt, but, from the nature of the case, they cannot be our representatives from a marketing point of view, nor are they competent to choose our representatives. They may fitly represent us in the present objects of the National Association, but marketing is different. It is business, commerce, and special business at that. The National Association, as it is at present, is so largely inexperienced, and will remain so largely inexperienced at that kind of work, that to put that business crudely into its hands will surely result in inefficiency. There is too much of these indefinite assumptions that the work is easy enough and can be done by anybody who is popular with bee-keepers. They must represent bee-keepers in special work, not general work. Producers must be represented by large producers, business by business men, special business by special men. The editor of the American Bee-Keeper,

who usually sees to the bottom of things, has suffered himself to fall in with the customary slipshod view, by assuming that anyone of the popular Eastern bee-keepers, who are general business men, could draw up a satisfactory and workable scheme of action. That doesn't follow at all. No doubt, the code of management that will be finally adopted, because successful, will be very simple, and will seem to the future producer nothing but a collection of almost axiomatic principles. But every one of those principles must and will be the outcome of experience. Our own marketing association violated one of the fundamental laws of co-operation during the first year of its existence. It didn't know any better. It found out by experience. Therefore, let us by all means base our start on the special experience of both principles and men.

"The gist of Mr. Daggett's article is implied in these words: 'Now let the farmers combine into big farming corporations.' He draws a very enticing picture of combination farming under the managements of experts, and shows how very gloomy the present state of things is in comparison. It is nearly all true. That portion of the article which may be misleading and dangerous implies his belief in the common ownership of land; a state of things decidedly dampening to individual energy, now being revolted against in Russia for that reason, where it has long been the rule among the peasants, and has been found wanting. All the good things for which he contends may be brought about in other ways than that. For the rest there need not be the slightest loss of individualism in most of the system he describes, but on the contrary, a great and strong and more just and universal development of the individual. But, there is a hitch in his scheme after all. He closes in

these words: 'Shall the commercial interests hold down the farmers any longer? Shall the bee-keepers (and bee-keeping is a branch of farming) continue to crush one another? To each, I say, no.' Politicians? What have they to do with the matter? That word stamps the whole article as socialism in disguise. The great defect of socialism is not so much in its ideas (always excepting its communistic extremes), as in the way it would apply them. It would work from the top down, instead of beginning from the top up. Reforms are not usually carried through in that way. When they are thus carried through, as in the case of our civil war, they are attended with terrible injustice and suffering; and they may not be carried through at all when attempted, yet cause the same injustice and suffering as in the case of the French revolution. Not even if it could be done by the peaceful use of the ballot, should it be attempted now. That would still be working from the top down. Socialism has no rights as a political party yet. When it has actually done, on a small scale, what it theorizes about on a large scale, when it can point to farmers' associations in every town, each with its town warehouse and manager, and its daily freight wagon for every main road, bringing in milk, cream, butter, eggs, chickens, and so forth, and carrying out groceries and mail, when it can point to a bricklayers' association in every city that employs one of its own members to serve as contractor, paying him the wages he deserves and no more, and putting in the pockets of its individual members the profits that contractors usually make, and can point to similar associations of other trades—then, and not before, should larger combinations be attempted or thought of. Not until the people are thoroughly educated by actual experience in

co-operative lines, so that each new move shall be a legitimate growth, should it ever be made a political venture. That time may not be far ahead, after all. But one thing is certain, that real effectiveness on a large scale cannot be secured in any other way than by effectiveness on a small scale first. If a few farmers on each main road would organize just as our Honey Producers' Association has done, with a warehouse and manager, and capital consisting of shares of stock drawing interest but not dividends, dividing the net profits among individual members according to the actual business transacted through the association by each, and would let the rest of the farmers go, and pay no attention to them, except when they wanted to come in one at a time, they would be successful from the start, without wasting time and energy on that baseless political idea that everybody has to be in an enterprise to make it a success, or that the majority shall force everybody to act in a certain way, and they would be laying the surest and quickest foundation for that future development into general use and conservation of land, and steel plate roads, and so forth, that Mr. Daggitt so glowingly describes, and would not be sacrificing individualism and the incentive to labor for improvements by communistic ownership of land.

"Mr. Aikin, in the Rocky Mountain Bee Journal, brings up the idea of making the National marketing association a stock company. It does seem as if that would be the best plan, for it would provide the capital to an extent no other scheme can. But the difficulty is, how to do so and retain the intimate connection with local organizations afforded by the representative plan? It has to be either one or the other. It cannot be both by any plan I can think of. A stock com-

pany must be controlled by its stockholders—the representative of local organizations would not come in at all as such. However, a virtual and effective connection might be established, though a formal one would be impossible, by making one of the by-laws of the central organization say that no association shall do business through it, at cost, whose members are not everyone stockholders in the central organization."

NEW SERVICE TO CALIFORNIA.

On January 4, 1903, the Chicago, Milwaukee & St. Paul Railway in connection with the Union Pacific and Southern Pacific Railways, will establish through car service between Chicago and Nebraska, Colorado, Wyoming, Utah, Nevada and California, with three daily trains in each direction. Equipment will consist of Pullman First-Class and Tourist Sleeping Cars, Buffet Library Smoking Cars, Dining Cars and Free Reclining Chair Cars.

For detailed information, for rates, time tables, sleeping car reservations, call on your nearest Ticket Agent or address Robt. C. Jones, Michigan Passenger Agent, Chicago Milwaukee & St. Paul Ry., 32 Campus Martius, Detroit, Mich.

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Eustis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

WANTED

Position, permanent if possible, by an experienced apiarist, in 1903. Strictly temperate. Honey production and queen rearing his specialties. Capable of taking full charge of any number of colonies. Best of references given. Correspondence solicited from everywhere. State full particulars when writing.

PORTER A. M. FEATHERS,
Whitesburg, Tenn.

Please mention the Review.

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.
To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

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POTATOES \$2.50
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Largest Growers of Seed Potatoes in America.
The "Rural New Yorker" gives Salzer's Early Wisconsin a yield of 7 1/2 bu. per a. Prices dirt cheap. Mailed seed book and sample of Testate, Speltz, Macaroni Wheat, 63 bu. per a., Giant Clover, each amount of 10c postage.
JOHN A. SALZER & CO., La Crosse, Wis.

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co.
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One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross. Shipped from New York or from factory.

Send for catalogue to

J. H. M. COOK, 62 Cortland St., N. Y. City

Please mention the Review.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

Victor's Superior Italians.

Owing to extremely unfavorable weather for queen rearing, and the increasing demand for my superior strain of bees, I will have to place the price at single queen rate until further notice.

W. O. VICTOR

Queen Specialist,

Wharton, Texas.

TYPE WRITER For Sale

A friend of mine has made a change in his business whereby he no longer has any use for a Remington typewriter for which he paid \$100 about year ago, and he now offers the machine for sale at only one half what it cost him—that is, for only \$50. It can scarcely be distinguished from a new machine, and is really as good as new except for the ordinary wear of one year's use. There is a metallic case goes with the machine. The machine is here in my office, and I have tried it and found it to be all right in every respect, and I can send a sample of the work to any one who wishes to see it. In my estimation this is a bargain. A writing machine, the best there is made, for only half price.

W. Z. HUTCHINSON, Flint, Mich.

Great Clubbing Offers.

Here is a list of magazines, together with the regular prices at which they are published:

CLASS A.

Frank Leslie's Pop. Mo.	\$1.00
Everybody's Magazine	1.00
Good Housekeeping	1.00
Woman's Home Comp'n	1.00
Success	1.00

CLASS B.

Review of Reviews	\$2.50
World's Work	3.00
Country Life	3.00
Current Literature	3.00
New England Magazine	3.00
Art Interchange	4.00
The Independent	2.00
Lippincott's Magazine	2.50

If you subscribe for one or more of these magazines in connection with the Bee Keepers' Review, I can make the following offer:

Success, and the Bee Keepers' Review, for only	\$1.75
Success, and either Frank Leslie's Popular Monthly, or Everybody's Magazine, or Good Housekeeping, and the Bee Keepers' Review, for only	2 25
Success, and any two magazines in class A., and the Bee Keepers' Review, for only	3.00
Success, and any one magazine in class B., and the Bee Keepers' Review, for only	3.50
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Magazines will be sent to one or different addresses as desired.

W. Z. HUTCHINSON, Flint, Mich.

PAGE & LYON, MANUFACTURERS OF AND DEALERS IN
APIARIAN SUPPLIES, NEW
LONDON, WIS. WRITE FOR
OUR FREE, NEW, ILLUSTRATED
CATALOG & PRICE LIST.

Advanced Bee Culture

Is a book of nearly 100 pages (the size of the Review) that I wrote and published in 1891; and I will tell you how I gathered the information that it contains. For 15 years I was a practical bee-keeper, producing tons of both comb and extracted honey; rearing and selling thousands of queens, reading all of the bee books and journals, attending all the conventions and fairs, visiting bee-keepers, etc., etc. Then I began publishing the Review, and, for several years, each issue was devoted to the discussion of some special topic; the best bee-keepers of the country giving their views and experience. ADVANCED BEE CULTURE is really the summing up of these first few years of special topic numbers of the Review; that is, from a most careful examination of the views of the most progressive men, and a thorough consideration of the same in the light of my experience as a bee-keeper, I have described in plain and simple language what I believe to be the most advanced methods of managing an apiary, for *profit*, from the beginning of the season through the entire year.

A new and revised edition, which includes the improvements of the past ten years, is just out; and is as handsome a little book as ever was printed. The paper is heavy, extra machine finished, white book, and there are several colored plates printed on heavy enameled paper. For instance, the one showing a comb badly affected with foul brood is printed in almost the exact color of an old comb. The cover is enameled azure, printed in three colors.

Price of the book, 50 cts. The Review for one year, and the book for only \$1.25.

W. Z. Hutchinson, Flint, Mich.

50 Cents

That's all it costs to become a regular reader of the

Rocky Mountain

Bee Journal

Let your subscription begin with the September number and you will get a full and detailed report of the recent Colorado Bee Keepers' convention, worth many times the cost of a years' subscription. Address the publisher,

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WINTER

Losses are not always the result of the same cause. They may come from starvation; from poor food; from improper preparations; from improper protection; from a cold, wet, or possible, a poorly ventilated cellar, etc. Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points, consult "ADVANCED BEE CULTURE." Five of its thirty-two chapters treat as many different phases of the wintering problems.

Price of the book; 50 cts.; the REVIEW one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

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100 Per Cent

Profit from bees. U. S. Honey Report of 1899, for California, 1901 with 300 cars of honey, we estimate a profit of 130 per cent. on the investment. By this same report the Eastern States show an average profit of only 50 per cent. on investment.

100 colonies in a good year will make a clear profit of \$1,000. (and in off years are no expense.) Live in the city. Have your apiaries on electric car lines. The

Pacific Bee Journal

only 25 cts a year. Clubbed with the Review. (new or renewal) for \$1.25.

The Pacific Honey Producers, are incorporated with \$50,000 capital. Stock is \$1 a share. Its property is a manufacturing plant, honey warehouses and apiaries. Prospectus on application. Live in the East. Have your apiaries in California. Address

Pacific Bee Journal,

237 E. 4th St. Los Angeles.

Dittmer's Foundation

Retail—Wholesale—Jobbing.

Having increased my shop-room, put in power and a new set of machines, I am now producing a better article than ever, with unlimited capacity to meet orders. I use a process that produces EVERY ESSENTIAL necessary to make it the best and most desirable in all respects. My process and automatic machines are my own inventions, which enable me to sell foundation, and WAX INTO FOUNDATION FOR CASH at prices that are the lowest. I make a specialty of working up Wholesale and Jobbing Lots of wax into foundation, for cash. If you have wax by the toolbs. or ton, let me hear from you. Catalog giving

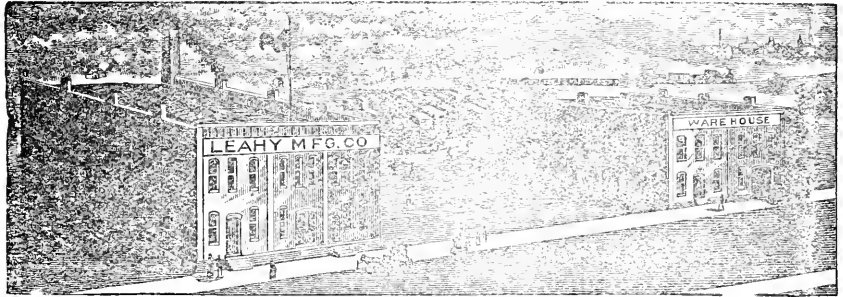
Full Line of Supplies

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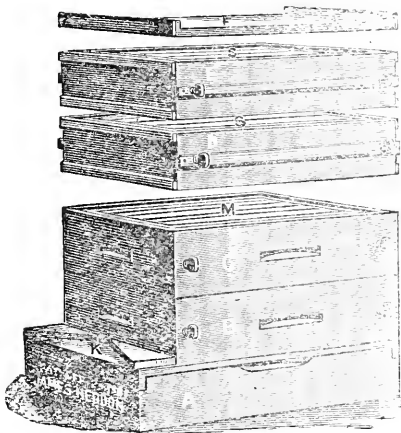
GUS DITTMER,

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Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Tele-copic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the casings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price: only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

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Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,
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Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*. Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,
SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

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— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Back Numbers

Of the REVIEW needed to complete our file are as follows: Jan. 1889; Jan. 1890; March, August 1891; Feb. 1893; Sept., Nov. 1898; May, Sept. 1899; Feb., Nov., Dec. 1900. Any one having any of these issues that they are willing to dispose of will please address WILMON NEWELL, 2-03-6t College Station, Tex.

CAR LOAD BUYERS

Of Bee Hives, and all kinds of bee supplies as well as consumers, will find it to their interest to let me know their needs. I sell to the jobbing trade all over the world. I have financial interests and business contracts with two of the largest factories in the United States, as well as being sole proprietor of a small plant of my own. One of my factories is cutting 12,000,000 feet of lumber this year. I want your business. Address, for a catalogue,

W. H. PUTNAM, River Falls, Wis.

THE

A. I. ROOT CO.,
10 VINE ST., PHILADELPHIA, PA

BEE-SUPPLIES.

Direct steamboat and railroad lines to all points. We want to save you freight.

Please mention 'the Review.'

HEDDON CASES.

I have over 100 of the Heddon, old-style section cases, that are well-made and painted, have been well cared for, and are practically as good as new that I offer at 15 cts. each

W. Z. HUTHINSON, Flint, Mich.

YELLOWZONES

Hot Shot For Pain and Fever.

I want to send to every bee keeper's family a full sized 25-cent trial box of **Yellowzones**

FREE

They get right hold of *pain* and *fever*, and will rarely disappoint you in *Rheumatism*, *neuralgia*, *headache*, *coughs*, *colds*, *grip*, *colic*, etc., and are absolutely *without a rival*.

You will be interested in the splendid testimonials of W. Z. Hutchinson, Bro. York and other leading bee keepers who have used them right along for years.

If there are occasional ailments in yourself or family—you hardly want to call a doctor and scarcely know what to do without him—for you are YZ made and for you I want to send this one box **free**. Not a "sample," but a regular 25c box.

It will do you good, send right now.

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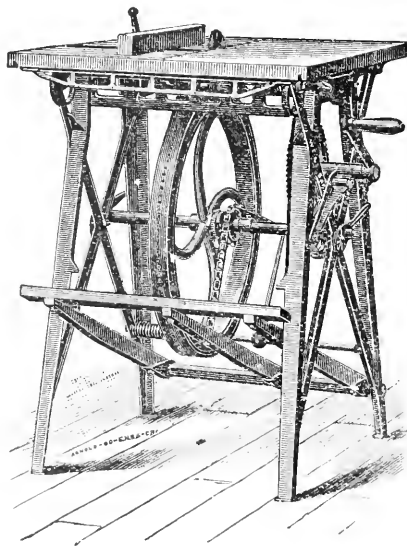
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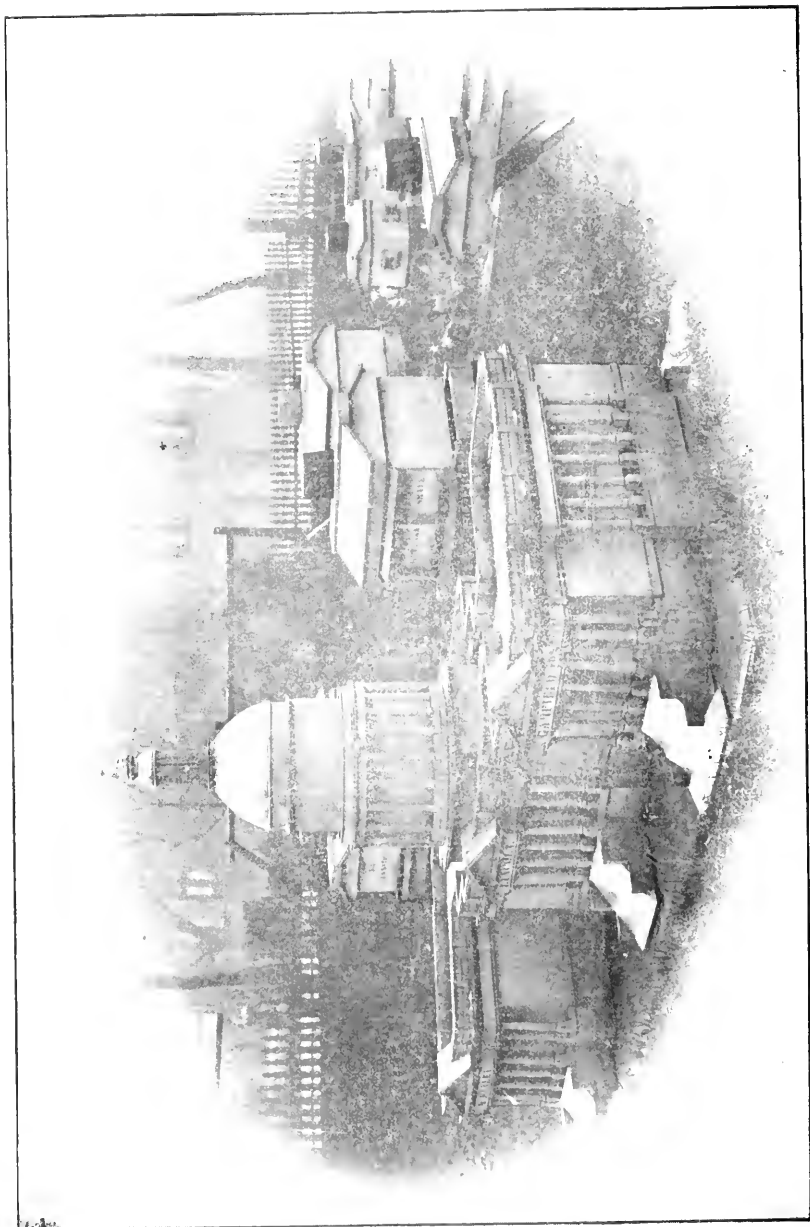
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W. Z. HUTCHINSON, Editor and Proprietor.

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NEATNESS AND ORDER.

BY W. Z. HUTCHINSON.

They are Profitable Traits in the Management of an
Apiary. Even the Artistic may be Indulged.

So often in my travels have I seen apiaries and honey-houses that made my heart ache, that I wish to make a plea for cleanliness, neatness and orderliness; yes, even for the artistic and the beautiful. I am the more free to say this that my heart has sometimes ached at the sight of my own yard and honey-house. There is no business on this green earth that can compare with bee-keeping from an artistic standpoint, that is so capable of being carried out in a beautiful way. It is the poetry of agriculture, and it seems almost like a desecration to see hives sitting at all angles, and at all points of the compass, as though a team had run away, and the hives had tumbled out of the hind end of the wagon; to see the grass as high as the tops of the hives and the yard full of rubbish; to see a honey-house littered up with all sorts of odds and ends, and every available space piled full of

a miscellaneous collection of "traps and calamities."

NEATNESS AND ORDER ARE PROFITABLE
IN MORE WAYS THAN ONE.

You may say that it takes time and money to keep things neat and tidy. In the beginning it does take a little time and money to make an appropriate place for everything. It does require a little time to always put things in their places, instead of dropping them where they are last used. It does take a little time to keep the grass mowed in the yard. All this is admitted. But, in the end, it is time saved, and, what is still more important, it is temper saved. A man can accomplish the most work when he is in a good-natured, happy, contented frame of mind. From a dollars and cents point of view, this kind of a frame of mind is profitable. Nothing is more conducive to this frame of

mind than to always find everything in its place, to have everything move off like clock-work, to work in neat, tasty, even beautiful surroundings.

A PROFITABLE BUSINESS IS NEVER DONE SLOVENLY.

Of course, the majority of us are in the business for the money there is in it; but I have noticed this, whether it is bee-keeping, farming, manufacturing, merchandising, or what not, the most profitable business is never done in a slovenly manner. Neatness, tidiness, and beautiful, artistic surroundings will not, alone, insure success, but that trait of mind that does everything so well, so thoroughly, so perfectly, that cleanliness and beauty are not overlooked, is the trait that brings success. Straightening up the hives, mowing the yard, planting some vines or flowers, cleaning out the honey-house and painting it, will not of themselves bring success, but the man who can so arouse himself that he will see the necessity of doing these things, and the help that will come from their doing, will not stop there. He will get better implements, and adopt better methods if there are any, and he will find out if there are.

I said that I had seen apiaries that made my heart ache. It is a pleasure to say that I have also seen those that brought a thrill of pleasure. Away off in the woods I once found an apiary where the owner had worked days at wheeling earth to level off a piece of ground upon which to set the hives, and, to crown all, he had planted beds of flowers. Morning glories ran riot over every stump or unsightly object. I have seen apiaries in which the greensward was like a velvet carpet, hives systematically arranged and bright from the touch of the paint-brush, and the honey-house pretty nearly as neat as my wife's kitchen.

I presume it is possible to carry this matter too far, especially in the rush of the season when there are several apiaries to look after, but, if everything is properly arranged and systemized, there need not be sloveliness. It is too expensive.

If there is any one who can keep his yard neat, and also indulge in the artistic, it is the amateur bee-keeper—the man who is keeping bees for pleasure—the man who makes his living out of some other business, and keeps bees simply because he loves them—the same as I take pictures. I have never seen a more beautiful illustration of this than that shown by our frontispiece this month. Mr. Horstmann is a letter carrier in Chicago, and keeps bees for pleasure. Down in the basement he has a snug little shop where he whiles away his leisure hours; and quite a number of them were thus employed last winter in the production of the beautiful Capitol hive, which is an exact miniature of the National Capitol at Washington. It contains three colonies of bees. One occupies the Senate chamber, one the House of Representatives and one the central part under the dome. There is also room for two or three, five-frame nuclei in the back part of the structure. The lawn is nicely mowed; there is a fountain at which the bees can drink; there are flowers and vegetables growing in the yard, and the honey-house is neat both inside and out. I know, because I saw it when I was there at the time of the Chicago convention, and took the photograph from which the picture was made.

Brothers, ours is a noble pursuit. Let us deal with it as such. Let us not degrade it by slovenly methods, even if we can't keep all our bees in Capitol hives.

Flint, Mich., Feb. 2, 1903.

GETTING RID OF FOUL BROOD.

BY R. L. TAYLOR.

How to Detect it; How to Hold it in Check; and
Finally get rid of it with Slight Loss.

"If you had an apiary of 200 colonies with cases of foul brood scattered through it, how would you manage throughout the entire season to get rid of the disease, or to keep it in check," the editor asks me.

In the first place I would avoid, as far as possible, getting into a panic. Foul brood is bad enough, to be sure, and its cure entails considerable labor and loss, but it is, fortunately, not without a remedy. I should try to preserve my equanimity, and thoroughly mature plans for effecting a cure; for there must be no halting while taking any step in the operation.

CHARACTERISTICS OF THE DISEASE.

The first point that claims serious attention is the distinguishing of the diseased colonies from the healthy ones. This is a matter that is attended with more or less difficulty, at any season of the year, but with more at some seasons than others, except in cases where the disease has made considerable progress. In these cases, even one with no experience, need have no hesitancy in coming to a correct decision. All the earmarks of the malady are but too evident; the weakness of the colony, listlessness of the bees, the repellent odor, the ragged cappings of the brood, the shapeless dead brood, and the general unprosperous appearance of the combs and the honey, make the diagnosis easy. But if the colony be yet strong, and but slightly affected with the mal-

ady, the case is quite different. If it be in the fall, after breeding has ceased, or in the spring before it has begun, the bees, owing to the strength of the colony, have almost, if not entirely, removed the cappings from the diseased cells, the odor is faint, if not practically absent, and the colony appears prosperous, so that even the adept, on a hasty examination, is liable to be deceived; and one without experience is sure to be. The diagnosis of those of this sort is the most difficult of all, and the difficulty increases with the slowness of the affection. How, then, may the disease be discovered in such cases? Let us go to one of the colonies badly diseased and take from the center of the brood-nest a comb—the newer it is the better—in which there has been brood during the past breeding season; now we will hold it in a good light, so that the light falls upon the comb not quite perpendicularly but at an angle of 70 or 80 degrees from the top of the comb; now we look down at an angle of about 40 degrees from the top of the comb into the cells and what do we see? In many of the uncapped cells on their lower sides—not bottoms—we see brownish, or greyish black, scales nearly as wide as the cells, and reaching nearly to the opening of the cells. These scales are the remains of brood destroyed by foul brood.

We will spend a little time in looking at them to fix in our minds the image of their forms; will examine the other side of the comb, and even

take out one or two more to look at. If the colony is weak, many of the affected cells retain a fraction, or the whole, of their cappings, but, in any case, there are many with no capping. If the colony has been afflicted with bowel trouble, one, on a careless examination, might take the scales to be dried excrement, once half liquid, but we look carefully and see that they are always in the same position, and of the same size and shape, which would not be the case if they were excrement. We will now return to the colony but little affected, and take out and examine, one after another, the combs in which brood has been reared during the past season. Now we see the scales at a glance. There may be but half a dozen in some of the combs, and in some none at all. It is safe for us to pronounce the colony diseased, and to treat it accordingly, but this test is not quite so certain as one we shall be able to apply when brood rearing has been under way for some time, and settled warm weather has come. I say it is not quite as certain, for the sole reason that in one or two cases I have known the scales of brood dead from other causes than foul brood, though, in those cases, I think the scales were all finally removed by the bees.

We will now go forward to apple bloom, or to the opening of white clover. If the colonies we visited earlier have been left undisturbed, we will examine them again in the same order as before. Providing ourselves with some toothpicks, or bits of straw, we go to the sicker hive of the two for its thorough examination, and proceed with the greatest deliberation, for we are trying to learn to distinguish foul brood with absolute certainty. Having an eye out continually for the appearance of robbers, which must be taken as a signal for closing the hive, and

postponing further examination, we raise the cover. If we are on the leeward side of the hive we may catch a faint whiff of the ill odor that proceeds from the diseased brood, as the cover is raised, but we make sure of it by bending over the hive with face near the top of the combs, but we do not unnecessarily prolong this part of the examination, for the scent is by no means pleasant—not worse than that of colonies badly affected with diarrhoea perhaps; not so bad, but quite different—something like that of a poor quality of glue as it is warming for use, or like that of a dead animal after it has lain and decayed and dried for weeks in the open air. With a little practice we shall not be liable to mistake the odor, and we shall find it of considerable assistance in discovering the disease to the extent that often the necessity of lifting combs will be precluded.

Now we will take out two or three combs from the center of the brood-nest, and look for the peculiarities in their appearance or contents. At the first glance, one who takes delight in seeing his bees prospering would have a feeling of depression come over him without realizing the reason for it. But we easily discover the reason. There is plainly a general appearance of shiftlessness, slovenliness and squalor. The combs are too dark, and without the natural, clean look. The bees do not cling well to the brood, but slink away; the cappings of the brood do not have the pretty, clean, slightly convex appearance, but some are flat or even concave; many are perforated, some slightly, others in a greater degree and are more or less ragged. Now we will look into the cells. Some, not capped, contain larvae of a clear pearly luster, others have nicely rounded capings—all these are as yet healthy. In the cells with

sunken, perforated and ragged cappings, and in many of those not capped at all, we see larvae of a brownish color of various shades from slightly yellow sometimes to the prevailing hue of a dark dirty brown. These are all dead. Did they die of foul brood? We can surely tell by trying them with our toothpicks. We open some of the sunken and the perforated cells and insert the sharp end of the toothpick into the remains of the larvae the different cells contain. The skin of each one goes to pieces with a slight touch, and a slight turn converts it into a homogeneous glue-like mass of the color of coffee when prepared with milk for drinking; and on withdrawing the toothpick the matter is drawn out in a string a half inch, more or less. It is foul brood, and the toothpick is the supreme test. There is no foul brood without viscosity and no viscosity without foul brood.

THE NECESSITY FOR CAUTION WHEN EXAMINING INFECTED COLONIES.

The toothpick, as used, we must dispose of with care to prevent the contamination of healthy bees. We may burn them in the smoker; and it is an additional safeguard to have always at hand a dish containing a weak solution of carbolic acid in which to wash tools and hands before manipulating a colony that may prove to be healthy.

Now we must go and examine the colony but slightly affected, for the detection of the disease in such a one requires some patience and care. On opening the hive, if we have a "good nose," we may, on applying it to the top of the combs just over the center of the brood-nest, possibly distinguish slightly the characteristic odor of foul brood, but very likely we may not be able to do so. We then remove combs from the center of the brood-nest. On a cursory view everything looks pros-

perous—the colony is strong, the brood is compact and abundant, and of a general normal appearance, and the bees are working energetically. But if we look carefully we may see here and there a cell the capping of which has lost its lively appearance. It is a little too dark, and is slightly flattened. We must have recourse to our toothpick. One breaks the suspicious capping. Yes, the larva is dead and discolored. The toothpick touches it with a slight turn and is withdrawn, bringing the stringy tell-tale matter with it. Other similar cells are found. There is no question but that it is foul brood.

HOW TO PREVENT THE DISSEMINATION OF THE DISEASE.

Now that it is established that foul brood has a foothold in the apiary we must make every effort to prevent its farther dissemination. It might be asked, why not do that by curing all the diseased colonies? The reply is that the periods of time when that can be done quickly and safely are limited, both in number and extent. The temperature must be warm enough for comb building, and security against robber bees must be had for the necessary operations, so that a time of waiting of greater or less length is pretty sure to intervene, hence the necessity for taking precautionary measures. And first, and most important, is the guarding against robbing. We must make a weak colony secure against the possibility of being attacked. The weak colonies are the ones by far the most likely to be diseased, so we will make sure not only that the entrances are small enough for successful defence, but also that the bees have sufficient spirit to make the defence. We will sacrifice, without hesitation, any infected colony that will not fight.

WHAT MAY BE DONE WITH MEDICATED SYRUP.

If the character of the time is such that the bees will take syrup, this may be taken advantage of by feeding diseased colonies a quart or two of medicated syrup made by mixing one ounce of salicylic acid in sufficient alcohol to dissolve it, in about 25 quarts of a not too thick syrup or honey. This will be found very helpful; and we will not omit to avail ourselves of it as fast as the diseased colonies are discovered. I have found that this medicated food stops the spread of the disease in the hive, and, no doubt, on stronger grounds, prevents the spread of the contagion to other hives. If the time be early spring, as we find colonies which were badly diseased the previous fall, before giving the food we will remove from each some of the combs which contain the dead larvae, and leave the bees only the ones which have few or none. These will prove sufficient until a cure can be effected; and the withdrawing of the combs with the greatest amount of affection will be a very decided advantage to the colony.

UNITING WEAK COLONIES.

We are now supposed to have critically examined the entire apiary, and distinguished each diseased colony by a prominent permanent mark and to have given each a supply of medicated syrup. We will now keep each supplied with this syrup until the flowers yield fairly well. In attending to this we shall find some of the colonies that are taking but little or none of the food; these we will unite either with each other, or with others that are stronger, putting two or more together as rapidly as it can be safely done. I say safely done, because two colonies standing some distance apart among healthy colonies may not be

brought close together at one movement for that would be likely to send some of the bees into healthy colonies. They must be brought together gradually so that all the bees will be brought along. We will make the united colonies strong by putting a sufficient number together to make them so, for weak ones will prove to be of little if any value.

A CAUTION REGARDING THE USE OF COMBS FROM COLONIES THAT HAVE DIED.

There is one other preliminary matter that must be attended to, and that is the examination of the combs of colonies that have died during the winter. Diseased colonies are particularly liable to perish, and a larger proportion of the dead ones will no doubt be found to be of that class. The status of each is to be determined in the same manner that we determined the condition of the colonies examined for foul brood early in the spring before brood rearing had made much progress; that is, by looking for the scale-like remains of the larvae which perished the previous year.

It will be understood, of course, that all diseased combs, that is, all combs from diseased colonies, bits of comb and honey, must be kept at all times where no prying bee can by any chance get access to them. These are the readiest means of the spread of the disease. The honey may be extracted from combs, containing sufficient to make it worth while, boiled well for at least fifteen minutes, then medicated and used for feeding; but unless one has conveniences for keeping all combs and honey safe, they should be burned up at once. However, with care, there is no good reason why the wax from the combs, and most of the honey, should not be saved. Everyone must consider his own

conditions to determine how he can best dispose of them without incurring risk.

GETTING RID OF THE DISEASE.

We now come to the final and indispensable operation for effecting a cure, and that consists simply in transferring the bees from their own combs to hives furnished with frames of foundation or frames with starters. I have not found it necessary to disinfect the hives containing diseased colonies, so, if found more convenient, the combs may be taken out, the bees brushed and shaken in front of the hive, and the hive furnished with frames of foundation.

But as to what time is this to be done, and what disposal is to be made of the brood?

AT WHAT SEASON TO DO THE WORK.

The operation may be successfully performed at any time during warm weather, if only sufficient allowance of time is made to enable the bees to complete their combs before the cool weather of the fall comes on. May, June and July are the best months, and of these about the beginning of the white clover flow would be the most favorable time of the year for beginning the work. This is so, both because it is the best time for the bees to build up without any care, as well as because it is the time when robber bees are least likely to be troublesome.

At this timely season, let us go into the apiary with the necessary hives, ready furnished, to undertake the work. We find many that were but slightly diseased strong and almost in condition to cast a natural swarm. Each one of this class is moved a little aside and one of the prepared hives is put in the place of each. Now, from each one take out the combs with the bees and shake the bees off in front

of the new hive, making sure that the queen goes with them, until we have a driven swarm, leaving sufficient in the old hive to care for the brood. Now we have a driven swarm from each one, and the old hives with the brood. Within a week or ten days we will see that each of the latter has given it a good young queen, or a good ripe queen cell, and in 21 days we will take away all the old combs and replace them with frames containing foundation or starters. This disposes of this class, and will surely effect a cure. It would be more than useless to give them another set of frames and another shaking out.

THE TREATMENT OF WEAK COLONIES.

Now we go back to the weaker class. These we will take in pairs. We first select the first pair, set one of them aside and put a new hive in its place and shake out the bees as in the former case, only get about all of the bees and the queen out. Now we put the old hive with the brood in the place of the other one of the pair, and bring that other one and shake out the bees and queen in like manner in front of the new hive, then take back the old hive and unite it with the one already on its stand; thus getting from the pair one new one with the bees and the two queens, and one united old one with the brood, that will be wanting a queen in a few days, and a new set of frames in three weeks, as in the former case. The rest are to be treated in like manner.

A good part of the success of this plan is owing to the medicated food given during all the forepart of the season. Without that the colonies would have been in comparatively poor condition which would have entailed an increase of care and labor.

The cure may be effected during any part of the three months mention-

ed, or even in August, but the giving of medicated food must be resorted to unless the field is yielding an abundance for comb building.

Sometimes the brood from several

colonies may be given to a single one, and that one treated later.

Without feeding during a dearth, absconding is pretty sure to take place.

Lapeer, Mich., Jan. 30, 1903.

BEE-KEEPERS NEED THE SCIENTIST.

BY ARTHUR C. MILLER.

They Should have Toleration even for Purely
Scientific Theorizing.

I noted with much interest your remarks, in yours of the 15th inst., concerning the trouble you have had in trying to get all of your subscribers interested in, and some of them even tolerant of, the scientific side of bee-keeping. It does seem strange that a man should be so impatient of matter in which he is not immediately interested, or perhaps with which he even disagrees, that he should stop his paper. To use a homely phrase he "cuts off his nose to spite his face." Now, I am particularly impatient of that class of writers who use the sanctimonious style, pose as great benefactors and deep investigators, when, as a matter of fact, all too much of their knowledge is either theory or the direct product of the labor of others, and they have not honor enough to acknowledge it. But I do not cut off my subscription therefor. I content myself with smiling at their vagaries, and pitying their dupes. Honest error is another matter; we are all liable to that.

Perhaps I can show to some, at least, of the objectors, wherein science will be of direct benefit to them, after which they may be more tolerant of discussions which seem to be fine spun theories of abstract subjects; for few persons are so obtuse as to spurn that

which will directly or indirectly yield them cash.

HOW THE SCIENTIST DIFFERS FROM THE ORDINARY OBSERVER.

To begin with, an explanation of "science" may be of assistance. Webster defines it as "knowledge of principles and causes; ascertained truths or facts." It is the fundamental cause for which the scientist searches, and it is not always possible, and most always difficult, to determine beyond doubt when he has found it. Not infrequently some well accepted and seemingly indisputable "fact" is upset and proved wrong by subsequent discoveries; sometimes in studies more or less foreign to the subject in hand. But instead of being discouraged by such overturning of beliefs, the true scientist hails the proof of error with almost as much pleasure as he does proof of truth. The scientist differs from the ordinary observer and student in degree rather than in method. The former proceeds with caution; testing, trying and weighing each step of his experiments; makes his observations as abundant as possible; compares the results of his work with those of others, when possible; and thus deduces from these what he believes to be "laws." The ordinary ob-

server, on the contrary, proceeds less methodically; is content with less exhaustive experiments, and decides off-hand. But between the two extremes there are so many shades that he is a reckless individual who will say, "here is the dividing line." So, let the scoffer beware, for he himself may be a truer scientist than the man at whom he scoffs.

HOW SCIENCE CAN HELP THE BEE-KEEPER—SOME EXAMPLES.

So much for the definition; now for one or more examples of the value of science to each and every bee-keeper.

We say bees winter well or ill because why? Careful, do not answer too quickly. One man says too much moisture, another not enough, but who knows?

We say bees swarm because they are crowded; because they are too hot; have too many young bees and not enough larvae; and a dozen other reasons. Will the scoffer say that a knowledge of the real why, the basic truth, the "principles and causes," the science of it, would not help bee-keeping?

We say such and such things are essential to the production of good queens. One man lays stress on cell-cups, another on size of cell building colonies, another on exact age of larvae, and for years the papers have been burdened with a mass of useless and needless discussion. Had any systemized effort been made to learn the "science" of it, all would have been settled long ago. Of late, Mr. Alley's methods and Mr. Gallup's discovery of what he calls an "Umbilical Cord" (but really the cast skin of the larvae), have started a fresh deluge of matter on the subject. With the exception of one person, no one has given the sine qua non (without

which nothing) of successful queen rearing, and that man is Mr. Pratt.

You may have a bushel of bees, cell-cups well "primed" with royal jelly, transferred larvae of an exact age, or Alley-strips containing eggs, but without that one condition you will fail to rear good queens. Though leading breeders generally, but unwittingly, meet that condition, they have never yet told the novice who failed the cause of his failure. Mr. Pratt is successful with queens in exceedingly small nuclei, because he knows the conditions necessary for their success. Other people, and eminent beemasters too, have failed with nuclei as small as his because they did not know the fundamental causes; the science of it. Mr. Pratt was scientific; he went to the root of the matter, and, learning the truth, was able to make his methods conform to the discovered "laws," and do it with a minimum of cost—in bee life and energy at least. Mr. Alley's system, as now used, conforms to these laws, and the difference in economy of practice of the two systems lies in the degree of human labor and cost of appliances used in each. Which is best will always remain a matter of opinion with the individual operator.

YOUNG BEES NECESSARY IN QUEEN REARING.

The "law" announced by Mr. Pratt is that bees of a certain age, i. e., those seen "playing" before the hive at certain times of day, are the ones which do the nursing and build the cells, and that older bees are a detriment. Now what proof is there that Mr. Pratt is right? How may it be known that his statement is no better than others which have been made before? First, he claims to have tested it sufficiently to have proved it. Second, Mr. F. B. Simpson and my-

self, each independently of the other, and of Mr. Pratt, have arrived at virtually the same conclusion. Do not misunderstand me as saying no allusion has ever been made to young bees being of value in queen rearing. What I want to impress is, that so far as I can learn, and except as noted, it has never been said that young bees were the chief essential to queen rearing, and that without them success is impossible. Certainly writers have said "have strong cell-building colonies with plenty of young bees," but has one of them known, or, knowing, said, that without the young bees, failure was certain? That the presence of old bees was a detriment? Not one!

In the American Bee-Keeper some months ago, I stated that a cupful of bees under right conditions would raise a perfect queen, whereas a bushel of bees without that condition would fail to produce a queen good for anything. The editor of the Amer-

ican Bee Journal, not knowing my reasons, took me to task for my claim, but I knew I was right, as is also Mr. Pratt and Mr. Simpson; and any one may prove it if ordinary care is used in the experiments.

Giving virgin queens to bees is a part of queen rearing that is controlled by the same law as governs their earlier development. If the nuclei are composed almost exclusively of young bees, introducing a virgin queen to them is easy. Size of nuclei is governed by climate, but the law of young bees and young bees only, must be observed or results are more than uncertain.

Now will the seoffer venture to say science is a waste of time to the practical man? Think of the hours, aye weeks, of time he would have saved both in reading and experiments could he have had scientific methods applied to this problem years ago.

Providence, R. I., Jan. 29, 1903.

KEEP FRESH AIR FROM THE BEES.

BY IRA BARBER.

Don't be Alarmed Because the Bees Roar; They
Are only Moving Honey.

That the time is near at hand when bees in winter quarters become uneasy unless properly protected from all currents of fresh air from the outside, is my excuse for again calling attention to this subject.

AIRING THE CELLAR KILLS THE MOST
ACTIVE BEES.

For many years, in my early experience in bee-keeping, I practiced airing bees in winter quarters whenever I heard them roaring, or found them

uneasy. It took me many years to learn why they roared; for I supposed they were suffering for something. By cooling them down with cold air, so they could not get up a buzz, all was quiet until a few more became warm enough to feel as though there was something for them to do, when there would be another carousal, and doors would have to be thrown open again to cool them off. It took me nearly 20 years to learn that when I cooled and quiet my bees by opening doors,

and otherwise ventilating my cellar, I was killing off all of my most active bees.

BEES ROAR WHEN MOVING HONEY INTO THE CLUSTER.

There is always a commotion in a hive when the bees are moving honey from the outside combs to the center of the cluster for daily use. It is perfectly natural for bees to roar when thus moving honey; and where a large number of colonies are kept in a room, even if only a few are engaged at one time in moving honey, they make a great noise, which causes one to think his bees are in trouble while the fact is, they are as happy as a kitten at play.

When I was in the habit of airing my bees in winter quarters, they did all of their roaring in the cellar, but when they got to their stands in the spring there was no roar left, for there would not be enough bees left to get up a good respectable roar. After I learned that bees would winter nicely with what air was in the cellar, and what naturally finds its way there, I found my bees did their roaring on the wing; and 75 or 80 per cent of them were ready for the sections when set out.

ANY CELLAR THAT WILL KEEP VEGETABLES WILL WINTER BEES.

Any cellar that will keep vegetables, such as potatoes, without freezing, will be all right for bees if kept dark; but, if it freezes, it is too airy. If cold can get in, warm air can, also; and if the bees are to be kept quiet they must not get a sniff of outside air while in winter quarters; that is, direct from the outside, such as we get in March and April when the snow is leaving.

Vegetables can be kept in the same cellar with the bees, and daily visits

made for them, and, with proper care, no harm is done; in fact, the bees pay no attention unless the stay there is unnecessarily long.

One of the most successful bee-keepers in this locality, living near me, has 242 colonies in his cellar right under his living rooms, with potatoes, apples, turnips, cabbages, and all such supplies for winter, onions, carrots and beets with the rest, and no ventilator of any kind, yet all do well, except it is a little too hot for some of the vegetables, as some of them have pretty good tops on when the bees are set out; but the bees come out in a roaring condition, as I have said, and a large part of the hives full from side to side and are ready for sections.

Doolittle never wrote or said a truer thing than he did when he said, in *Gleanings*, that airing bees in winter quarters was a step backward.

BEES STRUCK BY LIGHTNING.

This yard of bees, that I have been describing as wintering so well in the cellar, numbered 150 last spring, and was wintered with all this stock of vegetables, the winter before, and was able to fill over 10,000 $4\frac{1}{4}$ sections of fine clover honey amid all the rains we had, besides furnishing 1,500 lbs. of extracted honey from partly filled sections, and then was struck by lightning at the close of the season. Nine colonies were struck with one bolt. The one that the bolt struck first was shattered all into fragments, the lightning killing every bee and scattering the contents of the hive in every direction, then darting away in four different directions, and striking eight other hives, splitting strips of wood from the sides and ends wherever it touched them. It appeared to enter the hives by way of the nails, then from them to the wires in the

brood-frames, as all the brood over the wires was killed. On lifting out a brood frame one could see where every wire was by the black mark of dead brood on both sides of the comb.

It took the bees two or three days to clean every dead bee out, and there were quarts of them piled in front of each hive. The bees were insured, and promptly settled for, when claim was presented. Here is a point that all bee-keepers should see to that their bees are kept insured, for it is a kind of property that could not be saved in case of fire, and this case shows that lightning will hit bee hives and hit to destroy.

I would like to have Dr. Miller, and several others who are in the habit of airing their bees, agree to test this way of wintering, and see for themselves how strong and healthy their bees will come out. Don't be alarmed if they do roar, for they are always happy, as a rule, when they roar the loudest.

SUCCESSFUL WINTERING AT A HIGH TEMPERATURE.

I have wintered them so hot they could not stay in the hives, but would be all in a mass together, yet they

came out the strongest lot I ever saw. No fresh air was allowed to reach them when in that condition.

In case a man has only a few colonies, they will winter fairly well in almost any cellar; and, of course, would not raise the temperature of the cellar so as to require any special attention; if it did not freeze, the bees would be all right.

It is where large numbers are kept together, that fresh air is so demoralizing to them.

I see much of late urging bee-keepers to organize to sell honey. In this locality the only trouble is to get it to sell. Mr. Israel, of New York City, comes here every fall when there is a honey crop, and buys all there is, and pays cash on delivery, and the producers are well satisfied with the prices he pays them, and he never cares how many carloads they have, for he is ready to take all he can get.

I hope if E. R. Root comes up into this State next summer, he will come on to this locality, where some of the largest bee-keepers of the State are to be found, and where all winter the bees in cellars as I have described.

DeKalb Junction, N. Y., Feb. 2, 1902.

IMMEDIATE SUCCESSFUL INTRODUCTION.

BY T. K. MASSIE.

The Queen Released at Once and the Colony
Never Left Queenless.

A chapter from advanced proofs of Mr. Massie's new book, "The Queen Bee."

Upon the arrival of the queen, take an escape-board, as made with the "Twentieth Century, Ideal, Combination Hive," close the escape with a cork, and set it by the side of the colony to which the queen is to be in-

troduced. Set an empty brood-chamber on the escape-board. Smoke the bees of the colony. Open the hive, and select two combs of hatching brood. Shake off all of the bees, at least every old bee, on the ground in

front of the colony from which the bees were taken. When the combs of hatching brood are freed from bees, set them in the empty brood-chamber that sits upon the escape-board; placing them over that portion of the board that consists of wire cloth. The brood-chamber containing the combs of brood is now set upon the live containing the colony from which the combs were taken; the escape-board separating the two hives. As the bees are crawling back into the hive, as many as possible of the young, downy bees are picked up and dropped into the brood-chamber containing the combs of hatching brood. The cage containing the queen is now opened, set in the brood-chamber containing the combs of hatching brood, leaning it against the combs so that the queen and her attendants can easily crawl out upon the combs. The hive is now covered up and left until next day, when the entrance in the rim of the escape-board is opened sufficiently to allow a single bee to pass.

In from three to seven days the queen will be found laying, and she and her little colony will have become part of the colony; and her introduction consists in the removal of the obstructions—the old queen and the escape-board. While it is true that, in one sense, the queen is now a part of the colony to which she is to be introduced, it is equally true that she and her attendants form a little colony of her own, and the operation resolves itself into that of uniting these two parts. Viewing the matter from either standpoint, or from both, it will be seen that no queen need ever be killed in being introduced.

It is generally the condition and behavior of the queen which cause her to be balled and killed, and thus plan brings the queen and bees together with the queen in a normal condition.

To successfully unite these two parts of the colony, after the queen has commenced laying, go to the colony late in the evening, smoke the bees, set off the escape-board and brood-chamber containing the new queen, set the old colony to one side, and put a bottom-board on the old stand. On this bottom-board set a new hive containing frames furnished with starters only. Spread a single thickness of a newspaper over the frames, and, with a small stick, or the point of a pencil, pierce a few holes in the paper at one edge. Take the brood-chamber containing the new queen off the escape-board, and set it on top of the hive that is on the old stand—the one containing the frames furnished with starters. So place it that the combs of hatching brood will not come over the holes in the paper.

Now open the old colony, and find and remove the old queen, and shake all of the bees off the combs, down in front of the hive on the old stand, putting the combs in the upper story with the new queen.

The bees, finding all of their brood and their queen gone, at once set up a cry for a queen. By the next morning, however, they will have eaten out, or removed, most of the paper, and will all be practically on the upper combs with the new queen.

At first, they will get through the paper a few at a time, and each bee will, upon passing through the paper, find itself upon its own combs of brood. The bees soon find the queen, busy at her mission of egg-laying; there is nothing about her actions to provoke an attack, and they gladly become her escorts and protectors. It is doubtful if the bees ever realize that a change of queens has been made.

Tophet, W. Va., Dec. 13, 1902.

Editorial

The patent on the Heddon hive expired last September.

Michigan Bee-Keepers, at their convention held this month at Lansing, decided to raise their dues to \$1.00, and join the National Association in a body.

Officers elected at the late Michigan State convention of bee-keepers, are as follows: President, W. Z. Hutchinson, Flint; Vice-President, Geo. H. Kirkpatrick, Rapid City; Secretary, E. B. Tyrell, Davison; Treasurer, A. D. D. Wood, Lansing. Time and place of meeting was left with the executive committee.

A Cake of Candy made from granulated sugar and placed over a colony that is short of stores, will bring the colony through in excellent condition, said Mr. E. T. Abbott at the Chicago convention. It must be snugly tucked up with quilts or blankets. The moisture from the bees moistens and softens the candy, and this absorption of moisture keeps the bees dry.

Jacob Alpaugh, of Ontario, Canada, took a vacation this winter, going down to the land of sunshine and flowers, Florida, and while there all of his bees and appliances burned, together with the house in which the latter were stored. The bees were in the cellar. No insurance. Bro. Alpaugh will have the sympathy of his friends, and they should take a lesson from his loss, and keep their property insured.

Tall sections seem to be gradually and slowly, very slowly, being adopted in the place of the square style, if we may judge from the reports given at the Chicago convention. By placing the tall sections crosswise of the supers in which we now use the $4\frac{1}{4} \times 4\frac{1}{4}$ lengthwise, we can use the 4×5 section in the same supers by simply adding a narrow rim around the top of each super, thus making them high enough for the tall section. This will allow any one to give tall sections a trial with only a small expense.

New York Bee-Keepers will hold a series of institutes on the following dates, and at the places named: March 2 and 3, at Canandaigua; March 4, Romulus; March 5, Auburn; March 6, Cortland; March 7, Fulton; March 9 and 10, Syracuse; March 11, Amsterdam. Prof. Frank Benton, of Washington, who is furnished by the U. S. Department of Agriculture, at the expense of the Bureau of Institutes of the State Department of Agriculture, will be present and address the meetings. The New York State Association of Bee-Keepers' Societies will hold its annual meeting in Syracuse March 10, at 10 o'clock a. m., in the city hall. Prof. Benton and other prominent men are expected to be present. Special rates of \$1.25 per day have been secured at the Manhattan hotel on Fayette street.

Queen-Rearing methods and principles have not yet all been learned and given to the world. In a private letter recently received from Mr. Arthur C. Miller, he says that it is pos-

ible, but not practicable nor profitable, for the commercial queen-breeder, to rear good queens with only a teacupful of bees. He adds that a great mass of bees is not the only requirement for securing good queens. He experimented last summer by rearing queens from his most vigorous stock, with half a bushel of bees in a colony. He secured rousing great cells, and the most utterly worthless queens that he ever had. He had purposely omitted the *sine qua non*. After further experimenting, Mr. Miller expects to tell us more about the latter.

To stop robber bees from following the apiarist from hive to hive, in doing necessary work when no honey is coming in, Mr. C. W. Post, at the Ontario convention, recommended setting out some smeared combs for the bees to clean up. They become busy at that, as in a honey-flow, and do not bother during the rest of that day.

Mr. Holtermann objected on the score of the danger of spreading foul brood, and described a permanent portico he has on his hives. A wire screen can be slipped into grooves in the front, thus confining the bees of each hive to their own "porch." These portico screens are useful when moving bees, and, also, in a case of this kind, if they are put on in the morning, no robber bees can leave home that day. Early queen-clipping, or late extracting, or other work necessary when no honey is coming in, can be done without the annoyance or danger of robbers.

BEEES WILL NOT EAT GLUCOSE.

Glucose can not be fed to bees unless it is so largely mixed with honey that such feeding would not afford enough profit to make it worth while. At the Chicago convention Mr. N. E.

France said that he once hived a swarm on dry combs, confined them to the hive, and left them without feed for 24 hours. They were then offered glucose, and allowed access to it for 24 hours. It remained untouched. One fourth honey was then added. Still the mixture was untasted. He then added another one-fourth of honey, making equal parts of honey and glucose. The bees would now take enough to sustain life, but no more. Others have tried feeding glucose to bees and failed. This shows that the stories about glucose-fed comb honey are all emards.

PEAR BLIGHT AND BEES,

Some one has sent me a California paper containing a notice by Charles Downing, in which he warns bee-keepers to keep their bees out of his orchard until such time as the fruit has set, as he proposes to adopt as effective measures as possible to prevent the destruction of the coming crop.

In the same mail came a letter from Mr. Daniel Lesser, of Johnstown, N. Y., in which he states that he has a Clapp's Favorite pear tree in his orchard that blighted before it ever bloomed, and at a time when there were no bees in that neighborhood. The soil is a blue, slate clay, with a coarse, gravel sub-soil. He washed the tree with a strong, soft soap-water, and heel woodashes into the earth around the tree, still the blight continued. The next year he took the earth away, down to the roots, knocked small pieces of the bark off the largest roots, in several places, put half a pound of sulphur around the roots, put the earth back, and the tree has not blighted since. It bears crops of pears, notwithstanding that the garden has, for the last four years, been used as a bee yard.

THE UNTIMELY DEATH OF "RAMBLER."

John H. Martin, otherwise known as "Rambler," died Dec. 13, in Havana, Cuba. He was first taken with a fever, and, just as he was rallying from that, pneumonia set in, and he lived only a short time. He was decidedly the humorist of our ranks. His humor was not the wooden, made-to-order, try-to-be-funny-on-purpose kind, that kind that makes a man shudder, shut his teeth together hard and think thoughts that must not be spoken; Rambler's humor was spontaneous. It bubbled up like a clear spring that goes laughing and sparkling down the mountain-side. His humor was like that of Josh Billings. It was philosophy expressed in a humorous way. A sad but strange feature, considering the humorous style in which he wrote, was that deep down in his heart was a great sorrow. He was not given to talking of this, but he once wrote me than when the wife of his youth died, the light of his life went out. No man has done more to brighten and lighten the pages of *Gleanings* than has Rambler. He saved them from the monotony and heaviness that comes from heavy arguments continued month after month. It is sad to thus see friend after friend drop out of our ranks, but it should warn us that soon our life's work will be over, and lead us to do our very best while we do live.

THE GENERAL MANAGER ELECTION.

The majority of the Board of Directors of the National Bee-Keepers' Association, after thoroughly considering the matter, have decided that the election for General Manager was legal, and cannot be set aside. They would have been glad to have taken another ballot, but it would have been clearly illegal, and would have led to greater

troubles and complications. Mr. France would also have been glad to have had another ballot, but, when he became convinced that it was impossible, bravely consented to accept the office, made out a bond, and forwarded it to the chairman of the Board. It is now being passed around for acceptance by the members of the Board, and, by the time this is being read, the office will probably have been turned over to Mr. France, who, it is safe to say, has no enemies, and will make a good officer. While there have been some very unpleasant features connected with the General Managership during the last year, all are agreed that it is time to stop quibbling and wrangling, to practice a little forbearance, and get down to business. Nothing can be gained by further argument. Some of our lessons have been pretty severe, but it is to be hoped that they have been so thoroughly learned as to prevent further troubles from the same sources.

While through a peculiar combination of circumstances the amendments to the constitution that Mr. Abbott attempted to present at Denver were not sent out to be voted upon, there is no doubt that some amendments are needed. In fact, one great source, if not the source, of most of our late troubles have been from a lack of definiteness in our constitution. Last spring when I was consulting with a neighbor who is speaker of the House in our legislature, and asking his advice in regard to some of our practices, he asked me frequently: "What does your constitution say on that point?" When I explained to him its lack of definiteness, he said: "Well, I guess about the first thing you better do, is to give that constitution a thorough overhauling." It is a little early now, perhaps, to discuss details of needed changes, but it should be tak-

en up in time to have the matter thoroughly discussed before the holding of another annual convention.

HOW TO FILL TIN CANS WITH HONEY.

In filling the 60-pound tin cans with honey, particular attention must be paid to know when a can is full. One method is to place the can upon the scales and watch to see when the right amount has run in. All of this can be avoided by the use of a tin pail with a hole in the bottom near the side of the pail. This hole in the bottom of the pail is a little smaller than the hole in the top of the can, and pieces of boards are laid on the top of the can for the pail to sit upon. When the pail is filled it is placed in position, the plug pulled from the hole in the bottom of the pail, when the honey will run out into the can without further attention. Now then, find exactly how full the pail must be filled, twice, to exactly fill the can, and then place some mark on the inside of the pail, showing how full it must be filled. The pail can be filled to the mark very quickly, the hole first having been plugged up with a long wooden plug that will reach clear down through the honey, when the pail is full. When the pail is filled up to the mark, placed in position upon the can, and the plug pulled out, no more attention is required until the honey has all run out, and there is no danger of running the can over. Mr. N. E. France gave me the foregoing when I met him at the Chicago convention.

BEEES VERSUS MANIPULATION.

For two years the Review has been urging its readers to keep more bees; instead of keeping only from 50 to 100 colonies in the home-apiary, and spending much time in manipulations, establish more apiaries, and adopt

short-cut methods. At the Michigan convention, when some of the members were telling how they accomplished such and such things by attention and care, one member arose and said he preferred to keep more bees and do less fussing. He said he had four apiaries. One of them was 50 miles from home, and he visited it only four times during the year. "But," he concluded, "it paid me \$100 a visit." Nothing said at the convention did me more good than those few words. That is the kind of bee-keeping that the Review has been advocating, and trying to arouse its readers so that they could see its advantages. I can see from my correspondence that many bee-keepers are waking up to the possibilities of bee-keeping rightly managed. I received a letter recently from a bee-keeper in Ohio asking if I could direct him to some good locality in Michigan where he might go and establish a series of out-apiaries. About the same time I received a letter from a bee-keeper in Western Michigan asking to know where he could secure the services of a young man to go into partnership with him in the establishment of out-apiaries. Another bee-keeper with whom I talked at Lansing told me that he was done "fooling away his time" with a few bees. He has now secured 200 colonies, and is making arrangements for more. "If I am going to spend my time, I may as well make a business of it," was his wise conclusion. Mr. Tyrrell, the newly elected Secretary of the Michigan Association, is also making arrangements for more bees, and will establish out-apiaries. These are simply straws showing which way the wind is blowing. Simply keeping a lot of bees will not make a man rich. They must be kept in the right locality, and be rightly managed; but, on the other

hand, I have never known any one to become well-to-do from the keeping of bees unless he kept a lot of them. It is so simple as to be almost self-evident, yet it seems to have taken bee-keepers a long time to comprehend it and to act accordingly.

By the way, I have asked the man who managed his apiary with only four visits a year, to describe his methods for the benefit of the readers of the Review.

In line with the foregoing, it might be mentioned that the electric car routes, now threading the country in so many directions, greatly favor the establishing and management of out-apiaries. Even with only one line of road, a bee-keeper can have one apiary out three miles in one direction, another six miles out, another nine miles, and the same number and arrangement in the opposite direction, thus giving an apiary for each day in the week, and any one can be reached in a few minutes, at all times of the day, at a cost of only a few cents. Shook-swarmling and trolley cars may yet almost revolutionize bee-keeping. Friends, do wake up to the possibilities for commercial success in our beloved pursuit.

HAVE TOLERATION.

This country is large, and bee-keeping is being pursued under widely differing circumstances. Even in the same locality, the needs, tastes, and wants of all bee-keepers are not the same. Some keep bees simply for the pleasure or recreation to be found in the pursuit. Others are chiefly interested in solving the scientific problems connected therewith. Of course, the great mass of bee-keepers are in the business for commercial reasons, for the money to be made in producing and selling honey. Even with this class, the individual-needs may be

widely different. Locality also plays an important part. Some localities are excellent honey producers, but the question of marketing is a serious one. In other localities, there is no trouble in marketing the honey; help is needed in securing a crop. In the Northern States, the wintering problem is paramount; in the South it awakens no interest. A little consideration of these points will show how difficult it is to make a bee journal in which all readers will be interested in everything that appears in every issue. The man in Southern California cares nothing about the best methods of wintering bees in cellars, while the bee-keeper in New York or Vermont, who has little difficulty in marketing his honey at a good price, takes little interest in discussions about commercial organization for the purpose of co-operation in the matter of selling and shipping. A year ago some subscribers dropped out because the Review devoted so much space to a discussion of fine points and theories regarding scientific breeding. Others are now doing the same because so much attention is being paid to commercial organization. Let me suggest toleration. In some parts of the country there must be organization, or profitable bee-keeping cannot exist. The time may not yet be ripe for National commercial organization, it may never be needed in exactly the way that some of us have thought it would come, but this discussion is needed to enable us to work in the right direction. To show that this discussion has already borne fruit I have only to point to the fact that three local organizations have been formed since it began—one in California, one in Ontario and another in Colorado. At the Michigan convention held this month at Lansing, there was much talk about the need of some band for

tying the members together more closely. The convention is held in one part of the State one year; next year it goes to another part of the State, and the members gained at the former meeting drop out. There should be some selfish interest to bind them together; to keep them in the Association whether they attend all of the conventions or not. That of inducing all of the bee-keepers of the State to band together, and join the Association, and they buy their supplies at wholesale, was one of the plans that seemed the most feasible. A committee was appointed to take the matter in charge and see what could be done.

As I have said before, this is an age of organization, it is in the very air, and even if some of us do not see the immediate need of it in our individual cases, we ought to be tolerant and remember that it may be very important to some of our brethren. Don't drop your journal, let it be the Review or any of the other journals, simply because some subject in which you are not particularly interested is discussed at considerable length. The next special topic may be one that will prove of great benefit to you, although of only slight interest to those so anxious for organization. Have toleration.

EXTRACTED DEPARTMENT.

A NATIONAL HONEY EXCHANGE.

Some Reasons why one is Needed, and Some Obstacles to be Overcome in its Organization.

The Review wishes to place this matter of organization before its readers in a true light. It wishes to give all sides of the matter. It wishes to advise its readers for the best, or, better still, lay such facts and arguments before them that they can decide for themselves what is best. There is one man in our ranks whose counsels have been uniformly good, one to whom many of us have looked for wisdom, and seldom looked in vain, and that is Prof. A. J. Cook, of California, where organization among producers has been carried to greater perfection, and done more good, than in scarcely any other place that may be mentioned. Prof. Cook's wisdom and experience, coupled with his recent opportunities for observation along

this line, eminently fit him to give advice to bee-keepers on the subject of organization and co-operation; and such advice he has recently given in an article published in the American Bee-Journal, in which he says:

"I have been asked to give my opinion at length on the matter that came up at the recent National Convention at Denver. I am glad to do so as I have thought a great deal about it.

As I read the signs of the times there are two tremendous movements now on foot; tremendous in themselves, even more tremendous in their promises and influences. I refer to consolidation and co-operation.

Consolidation is in the very atmosphere. Hardly a day passes that we do not hear of the formation of another gigantic trust. These bring with them so much of good policy, wisdom and economy that we can never hope to say them nay. All must admit that were all people generous, unselfish, and possessed of the Christ-like spirit trusts would be wholly a blessing.

Trusts imply organization, and so we find all the great commercial interests thoroughly organized. Even where they have not yet consolidated into trusts, they are almost invariably organized beyond their mere corporate limits. They pool their interests; at least they work with the understanding that though not so potent to aid as when developed into the real trust is yet very full of helpful influence. This co-operation is wider and more general than consolidation. Unwritten co-operation is wider in its reach than most of us even dream. In all our towns or cities three or more meat or milk carts traversing the same street show how consolidation would ply a helpful oar. Co-operation is already at work, for all sell at the same price, and each, if rational, regards the interests of the others. The fact that livery hire in a large city is precisely the same at each stable for like service shows how co-operation is reaching out everywhere. Uniform sleeping-car rates, and the nickel car ride, are further evidence. We cannot make all people generous and unselfish. We can hope for such in the future, but we see a long stretch between us and that.

We can all organize and co-operate. That is what we must do. That is to be the grand consummation of the present century. The Magna Charta, Bill of Rights, Habeas Corpus, French Revolution, our own blessed government, none of them came easy. Each was born of great effort, struggle and hardship. Each came with blessing to the common people.

Co-operation among all classes implying very thorough organization will force men to do what unselfishness would do of its own volition. Our laboring classes will never secure their rights and a fair share of the world's fruits, or a right recompense

for their labor, until they are all thoroughly organized and able to act as a unit. This time must, will come. If we are wise and right-minded we will all wish to help it on.

The recent serious coal-strike would be even more deplorable except as it will surely usher in this good time of universal organization of labor. One man, or even the craftsmen of one mine or factory, can never stand even, with capital massed and united as it is. All must combine. All will combine, as 'ever the right comes uppermost, and ever is justice done.' This so long as we have a greedy, selfish world is the laborers' only hope.

It will come slowly, and may take very long, but come it will.

God speed the day.

Some will say, 'Alack the day. Labor is ignorant, impulsive, uncontrollable, savage. With the reins in her hands there will be rough driving.' I have no fear. I believe we are as safe, very likely safer, in the hands of the humble toiler as in the grip of the capitalist. The present strikers are recently from the poorest and most ignorant of Europe's lowest peasants. Yet for the most part how self-controlled has been their habit even under the most trying of circumstances.

The farmers, including bee-keepers, are dependent, but not as dependent as are the general laborers, so they are not as certainly oppressed nor do they feel the hand of co-operation and consolidation as do the trades-union people. Yet when high freights and poor market they feel pressure that can only lighten when they, like the capitalists and the trusts, have potent voice in the output and the value that shall be placed on it. How tremendously the farmer is interested in the development of markets, in wide and wisest distribution, in the curtailment of unfair competition. Yet at present how

utterly unable he is to exercise control in any of these lines. His products are unique in being staple; they are very necessities, and so they and their producers should exercise a leading control. This grand consummation is coming. We can all help to hasten the glad day.

In the very successful working of the Southern California Fruit Exchange we see the very successful forerunner. Half of our citrus groves have already combined and done a business of \$30,000,000 in less than nine years, and nine million in one year, and yet have sustained almost no loss, less than one-fortieth of one percent. Even its enemies admit its marvelous success, and that it has served the citrus industry very greatly even if it has not been its salvation.

Our orange-growers were far from markets, freights were exorbitantly high, competition with Sunny Italy with short distance and cheap transportation was terribly severe; except from the wise management of interested salesmen the industry would have been swamped. On the shoulders of the Exchange it has risen from the ashes of a red-ink decadence to perhaps the most prosperous rural industry of the country. There is no reason why apiculture and other branches of farming may not reap similar benefit. Of course, if they are less concentrated in locality, and have not so intelligent a contingent, they must wait longer for this good fruit.

There are serious inherent obstacles to rapid success in these directions. Our farmers, including apiarists, are isolated. They are generally unacquainted with the methods of trade in these stirring times; they are suspicious, and fear to trust others; they often are very slow to give their products into the hands of others to handle; in short, reluctant to do what

the successful railroad and factory must, and safely do in their operations. Our farmers must be educated to see the necessity, safety and great wisdom, of course. It will not be the work of an hour. Such experience, however, as that of Southern California Fruit Exchange is a valuable object lesson and a quick teacher. Are not our bee-keepers sufficiently educated to organize in like way? And thus become the second teacher in this great school of advanced and improved methods of business.

A second embarrassment comes from the need of first-class management. These combinations do a tremendous business. This requires great integrity, push, business sense, and breadth of mind and judgment. Such qualities are not lying around hunting for employment, and must be patiently sought for and generously recompensed. Railroads appreciate this fact and act accordingly. Farmers are not likely, from their very life habits, to appreciate such business character rightly, are slow to acknowledge its rarity, and are reluctant to recompense it as do other lines of business. This is certainly a grave obstacle but must be pushed aside, with more time and wisdom. Our people must recognize the value of business judgment, and must be willing to pay for it. A simple exercise of superior business instinct may win or save many times a high salary. How short-sighted, then, to refuse it when large interests are involved!

A threatening companion of this wise, competent manager is his cupidity. He may so fully appreciate his own value that he himself will put an enormous price upon his service. California has already suffered in this way. Mr. Kearney, of the Raisin Combine, won a very large success the first year of the organization. He was

paid a very large salary. No doubt it might have been better to have retained him at a much larger salary. It is not strange, however, that the farmers chafed under a proposition to increase the recompense largely. It has seemed strange to me that men cannot be broad enough to see that there is glory in such service far beyond the value of money. I should suppose that Mr. Dennis Kearney, and the fine business men that have helped to bring the Southern California Fruit Exchange to such tremendous proportions and to such gratifying success, would take such pride in their achievement that they would be more than content, and would be the last to jeopardize the further success by any proposition of higher remuneration. I can but believe that men will be raised up who will not only be able to push this work to its highest accomplishment, but will also be more than willing to accept salaries that will be tolerated, without irritation, at least, by our most wise and progressive farmers.

With this as an introduction I will leave the subject for a time, when I will outline what seems to me, in view of the experience already enjoyed in Southern California, may be adopted in the marketing of our honey product. I have a hope—not over sanguine I must say—that with our excellent bee-papers and wide-awake, intelligent bee-keepers, we may commence a work of education that will soon bring us a honey exchange in California if not in the whole country, which will rival in interest and value that of the Southern California Fruit Exchange. There is every reason to believe that Arizona, Utah, Colorado, and very likely several other States, will quickly fall into line even if they do not lead California in this new enterprise.

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Eustis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

Winter in California.

Sunshine and summer, fruit and flowers all winter long in California. The quick way to get there is via Chicago, Milwaukee & St. Paul and Union Pacific line. Three through trains, Chicago to San Francisco, every day.

Robt. C. Jones, Michigan Passenger Agent, Chicago, Milwaukee & St. Paul Ry., 32 Campus Martius, Detroit, Mich.

Good Queens at Low Prices.

If it is queens you want, why, send direct to the NEW CENTURY QUEEN REARING CO., and get a queen any day, of any race, fresh from the moulds. Untested, of any race, 50c each; 3- and 5-banded Italians, tested, 75c each, all other races, \$1.00. We have an entirely new system by which we rear queens, which explains why we can offer them at such low prices. Send for circular.

NEW CENTURY QUEEN REARING CO.,
2-03-1f Berclair, Texas.

GOOD MAN WANTED.

I would like to secure the services of a young, married man, one who has had some experience with bees. I wish him to come and live on my place and take a partnership interest in my business. I have a good farm with good buildings, and 200 colonies of bees, and I wish to establish out-apiaries if I can get a good partner in the business. No capital will be required and it will be a good chance for the right kind of a man.

W. E. FORBES,
2-03-1t Plainwell, Mich.

Please mention the Review.

A Snap

IN BEE SUPPLIES

I have the following articles in bee supplies which, owing to other business requiring my attention, I will close out at less than cost. Thirty of Root's 1½ story, 8-frame, Dovetail hives with shallow extracting frames in supers, and with Hoffman in brood frames, at \$1.35 each; 300 made up Hoffman brood frames at \$2.15 per 100; 400 shallow (5½ deep) extracting frames at \$1.50 per 100; one Daisy Foundation Fastener, without lamp, 65 cents; ten Bee entrance guards at 10c; ten 8-frame zinc honey-boards at 10c each; two Cogshall bee brushes, 10c each; five mosquito-bar bee-veils, the lot for \$1.00; 50 Doolittle cell protectors, the lot for \$5.00; 200 2ct-size Benton queen cages (with candy) for \$3.00; 50 nice, clean all-worker brood-combs, in Hoffman frames for \$5.00; 12 copies Hutchinson's late edition of *Advance Bee Culture*, the lot at 40c each. Order at once if you want these goods. Can ship at once. Bees, queens, and nuclei for sale.

ARTHUR T. DEWITT,

2-03-tf

Sang Run, Md.

Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-26, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. The have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902.

Mr. Atchley, Sir:—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 140 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm each stored 28 pounds of honey; so you see I have 11 colonies from one, and 56 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen or heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 56 pounds of honey. If any of you scienific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I want no letter. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3- and 5-banded Italians, Cyprians, Albinoes, Holylands and Carniolans, bred in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$9.00 per doz. All other months, 75c each, \$1.25 for six, or \$8.00 per doz. Tested queen of either race, from \$1.50 to \$3.00 each. Breeders from \$3.50 to \$10.00 each. 1-2 and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY

P. O. Box 79, Beeville, Bee Co., Texas

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

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210 Kinds for 16c.

It is a fact that Salzer's seeds are found in more gardens and on more farms than any other in America. There is reason for this. We own and operate over 5000 acres for the production of our choice seeds. In order to induce you to try them we make the following unprecedented offer:

For 16 Cents Postpaid

- 25 sorts wonderful onions,
- 25 sorts elegant cabbage,
- 15 sorts magnificent carrots,
- 25 peerless lettuce varieties,
- 25 rare luscious radish,
- 20 splendid beet sorts,
- 75 gloriously beautiful flower seeds.

In all 210 kinds positively furnishing bushels of charming flowers and lots and lots of choice vegetables, together with our great catalogue telling all about Macaroni Wheat, Billion Dollar Grass, Trevisato, Bromus, Speltz, etc., all for only 16c. in stamps and this notice.

Onion seed at but 60c. a pound.

JOHN A. SALZER SEED CO.,
La Crosse, Wis.

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co. Sheboygan, Wis.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$1.50 per gross
Shipped from New York or from factory.

Send for catalogue to

J. H. M. COOK, 62 Cortland St., N. Y. City

Please mention the Review.

Victor's Superior Italians.

Owing to extremely unfavorable weather for queen rearing, and the increasing demand for my superior strain of bees, I will have to place the price at single queen rate until further notice.

W. O. VICTOR

Queen Specialist,

Wharton, Texas.

"THE QUEEN BEE"

Now in the hands of the printers, tells how to rear the

BEST OF QUEENS;

tells the cause of and remedy for injury in shipment; how they may be DIRECTLY INTRODUCED with positively no risk of loss or injury. It gives much other valuable information. It describes

The 20th Century Double-wall, Ideal, Combination Hive,

the best all-purpose hive in existence. It tells how, by combination, a single-wall hive is converted into a complete, double-walled hive without extra cost. Order a copy today. Advance orders received for 12 two-cent stamps.

T. K. MASSIE

2-03-41

Tophet, W. Va.

We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest

Send for Catalog

MINNESOTA BEE-KEEPERS' SUPPLY MANUFACTURING CO.
Charles Mondeng, Prop.

Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

Great Clubbing Offers.

Here is a list of magazines, together with the regular prices at which they are published:

CLASS A.

Frank Leslie's Pop. Mo.	\$1.00
Everybody's Magazine	1.00
Good Housekeeping	1.00
Woman's Home Comp'n	1.00
Success	1.00

CLASS B.

Review of Reviews	\$2.50
World's Work	3.00
Country Life	3.00
Current Literature	3.00
New England Magazine	3.00
Art Interchange	4.00
The Independent	2.00
Lippincott's Magazine	2.50

If you subscribe for one or more of these magazines in connection with the Bee Keepers' Review, I can make the following offer:

success, and the Bee Keepers' Review, for only	\$1 75
success, and either Frank Leslie's Popular Monthly, or Everybody's Magazine, or Good Housekeeping, and the Bee Keepers' Review, for only	2 25
success, and any two magazines in class A., and the Bee Keepers' Review, for only	3.00
success, and any one magazine in class B., and the Bee Keepers' Review, for only	3.50
success, and any two magazines in class B., and the Bee Keepers' Review, for only	5.00
success, and any three magazines in class B., and the Bee Keepers' Review, for only	6.50
success, and any one magazine in class A., with any one magazine in class B., and the Bee Keepers' Review, for only	4.00

Magazines will be sent to one or different addresses as desired.

W. Z. HUTCHINSON, Flint, Mich.

PAGE & LYON, MANUFACTURERS OF AND DEALERS IN
APIARIAN SUPPLIES, NEW
LONDON, WIS. WRITE FOR
OUR FREE, NEW, ILLUSTRATED
CATALOG & PRICE LIST.

Advanced Bee Culture

Is a book of nearly 100 pages (the size of the Review) that I wrote and published in 1891; and I will tell you how I gathered the information that it contains. For 15 years I was a practical bee-keeper, producing tons of both comb and extracted honey; rearing and selling thousands of queens, reading all of the bee books and journals, attending all the conventions and fairs, visiting bee-keepers, etc., etc. Then I began publishing the Review, and, for several years, each issue was devoted to the discussion of some special topic; the best bee-keepers of the country giving their views and experience. *ADVANCED BEE CULTURE* is really the summing up of these first few years of special topic numbers of the Review; that is, from a most careful examination of the views of the most progressive men, and a thorough consideration of the same in the light of my experience as a bee-keeper, I have described in plain and simple language what I believe to be the most advanced methods of managing an apiary, for *profit*, from the beginning of the season through the entire year.

A new and revised edition, which includes the improvements of the past ten years, is just out; and is as handsome a little book as ever was printed. The paper is heavy, extra machine finished, white book, and there are several colored plates printed on heavy enameled paper. For instance, the one showing a comb badly affected with foul brood is printed in almost the exact color of an old comb. The cover is enameled azure, printed in three colors.

Price of the book, 50 cts. The Review for one year, and the book for only \$1.25.

W. Z. Hutchinson, Flint, Mich.

50 Cents

That's all it costs to become a regular reader of the

**Rocky Mountain
Bee Journal**

Let your subscription begin with the September number and you will get a full and detailed report of the recent Colorado Bee Keepers' convention, worth many times the cost of a years' subscription. Address the publisher,

**H. G. Morehouse
Boulder, Colo.**

100 Per Cent

Profit from bees. U. S. Honey Report of 1899, for California, 1901 with 300 cars of honey, we estimate a profit of 130 per cent. on the investment. By this same report the Eastern States show an average profit of only 50 per cent. on investment.

100 colonies in a good year will make a clear profit of \$1,000. (and in off years are no expense.) Live in the city. Have your apiaries on electric car lines. The

Pacific Bee Journal

only 25 cts a year. Clubbed with the Review. (new or renewal) for \$1.25.

The Pacific Honey Producers, are incorporated with \$50,000 capital. Stock is \$1 a share. Its property is a manufacturing plant, honey warehouses and apiaries. Prospectus on application. Live in the East. Have your apiaries in California. Address

**Pacific Bee Journal,
237 E. 4th St. Los Angeles.**

WINTER

Losses are not always the result of the same cause. They may come from starvation; from poor food; from improper preparations; from improper protection; from a cold, wet, or possible, a poorly ventilated cellar, etc. Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points, consult "ADVANCED BEE CULTURE." Five of its thirty-two chapters treat as many different phases of the wintering problems.

Price of the book; 50 cts.; the REVIEW one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON, Flint, Mich.

Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, because it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

**Working wax into foundation
for cash**

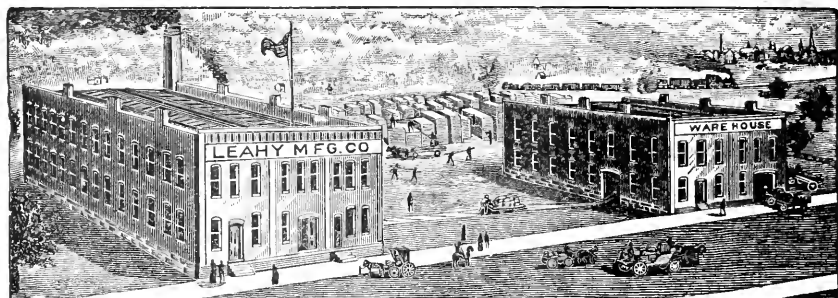
a specialty. BEESWAX ALWAYS WANTED at highest prices. Catalog giving

Full Line of Supplies

with prices and samples, free upon application. Beeswax wanted.

**GUS DITTMER,
Augusta, Wisconsin.**

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price: only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW


Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,

JAMESTOWN, N. Y.

 Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Back Numbers

Of the REVIEW needed to complete our file are as follows: Jan. 1889; Jan. 1890; March, August 1891; Feb. 1893; Sept., Nov. 1898; May, Sept. 1899; Feb., Nov., Dec. 1900. Any one having any of these issues that they are willing to dispose of will please address WILMON NEWELL, 2-03-6t College Station, Tex.

CAR LOAD BUYERS

Of Bee Hives, and all kinds of bee supplies as well as consumers, will find it to their interest to let me know their needs. I sell to the jobbing trade all over the world. I have financial interests and business contracts with two of the largest factories in the United States, as well as being sole proprietor of a small plant of my own. One of my factories is cutting 12,000,000 feet of lumber this year. I want your business. Address, for a catalogue,

W. E. PUTNAM, River Falls, Wis.

THE

A. I. ROOT CO., 10 VINE ST., PHILADELPHIA, PA BEE-SUPPLIES.

Direct steamboat and railroad lines to all points. We want to save you freight.

Please mention the Review

HEDDON CASES.

I have over 100 of the Heddon, old-style section cases, that are well-made and painted, have been well cared for, and are practically as good as new that I offer at 15 cts. each

W. Z. HUTCHINSON, Flint, Mich.

YELLOWZONES

Hot Shot For Pain and Fever.

I want to send to every bee keeper's family a full sized 25-cent trial box of **Yellowzones**

FREE

They get right hold of *pain* and *fever*, and will rarely disappoint you in *Rheumatism*, *neuralgia*, *headache*, *coughs*, *colds*, *grip*, *colic*, etc., and are absolutely *without a rival*.

You will be interested in the splendid testimonials of W. Z. Hutchinson, Bro. York and other leading bee keepers who have used them right along for years.

If there are occasional ailments in yourself or family—you hardly want to call a doctor and scarcely know what to do without him—for you are YZ made and to you I want to send this one box **free**. Not a "sample," but a regular 25c box.

It will do you good, send right **now**.

W. B. House, De Tour, Mich.

Superior Stock.



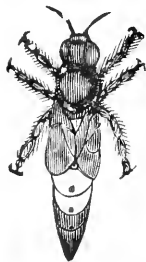
If the advertising that I have been doing the past three years has not convinced you that the Superior Stock that I have been offering for sale is really superior, then it is the fault of the advertising, for the stock is really all that I claim for it. I have guaranteed safe arrival, safe introduction, purity of mating, and satisfaction to the extent that a queen may be returned inside of two years, and the money will be refunded, together with 50 cts. to pay for the trouble. No other breeder makes any such guarantee. I have sold hundreds of queens under it. I do not know of a single dissatisfied customer, while I have dozens of letters from men telling of increased results from the introduction of this stock, and asking: "Can I get any more queens of you like the one I bought two years ago?"

Although the price of these queens is \$1.50 each, I have never been able to keep up with the orders. Most of my customers wait until spring before sending in their orders, and then have to wait from four to eight weeks. A few are far-sighted enough to send in their orders in the fall or winter, and these get their queens in May or June, in time to be of some service to them the same year. Send \$1.50 now and I'll book your order, and you will get your queen early next spring.

The price of a queen alone is \$1.50, but I sell one queen and the Review one year for only \$2.00. When you send in your renewal to the Review, send another \$1.00 (\$2.00 in all) and your subscription will be put ahead one year and your order booked for a queen next spring.

W. Z. Hutchinson, Flint, Mich.

Tennessee Queens



Daughters of Select Imported Italians. Select long-tongued (Moore's), and select, Straight 5-band Queens, bred $3\frac{1}{2}$ miles apart, and mated to select drones. No bees owned within $2\frac{1}{2}$ miles; none impure within 3, and but few within 5 miles. No disease. 30 years' experience. Warranted queens 75c each; tested, \$1.50 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

Bee - Supplies

Root's goods at Root's prices. Ponder's honey jars. Danzenbaker Hives and everything used by beekeepers. Catalog free. Walter S. Ponder, 512 Mass. Ave., Indianapolis, Indiana.

—If you are going to—

BUY A BUZZ-SAW,

write to the editor of the REVIEW. I have a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Please mention the Review.

Make Your Own Hives.

Bee - Keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

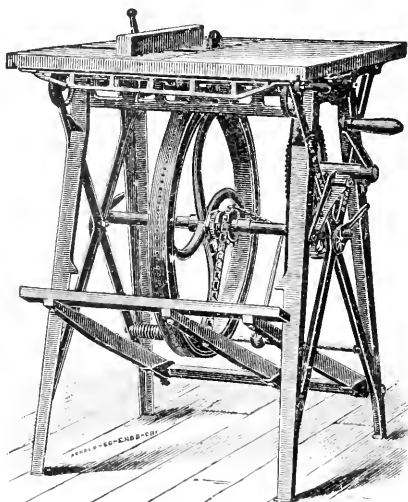
Machines on trial.
Send for Catalogue.

W. F. & JNO. BARNES CO.,

384 Ruby St.,

Rockford, Ills.

7-02-24t





E. D. TOWNSEND, Remus, Mich.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor

VOL. XVI. FLINT, MICHIGAN, MARCH 10, 1903. NO. 3.

MANAGING AN APIARY
WITH ONLY FOUR VISITS
A YEAR. BY E. D. TOWN-
SEND.

Friend Hutchinson: In response to your request for particulars about my management of out-apiaries, and a few words regarding my views and methods in general, I would say that I commenced bee-keeping in 1876, and have since been reading the bee journals, and trying to keep abreast of the times. During the first twenty years, bee-keeping was carried on as a side-issue, I having only a home-apiry; but it gave me plenty of opportunity to experiment and decide upon the proper size and style of hive for my locality. I also practiced spring stimulative feeding; spreading the brood to get as large colonies as possible before our clover season opened (about June 15th here); then contracting them down to four or six combs during the honey flow to force the bees above into the surplus apartment; then when they swarmed I divided them on five frames with dumplings on both sides, and foundation starters only in the frames, etc. I

write this so you will see that I have been all through the period of intensive bee-keeping, so much in vogue fifteen or twenty years ago.

FUSSING WITH THE BEES IN SPRING OF
NO BENEFIT.

During all of these years, a part of the colonies were worked for extracted honey, and these colonies were always allowed their full brood-nests. Part of them were not disturbed at all, but were allowed to build up without any assistance whatever, and when extracting time came no one could see any difference in the colonies. Neither was there any material difference in the amount of honey stored.

TEN-FRAME LANGSTROTH THE BEST SIZE
FOR EXTRACTED HONEY
PRODUCTION.

After trying many kinds and sizes of hives, from eight-frame Langstroth to ten-frame Quinby, I have decided upon the ten-frame Langstroth as the best for the production of extracted honey in this locality, as there is no size that produces any more honey. Besides, everything larger has to be

contracted during the cold months to winter well out-doors; and, with my system of working, to get the most honey with the least labor, it is out of the question to handle brood frames to any extent.

LABOR THE PARAMOUNT FACTOR IN HONEY PRODUCTION.

A word about labor. With bees selling at from one to three dollars a colony, as they are now-a-days, it is evident that labor is the paramount question in the production of honey. If the reader will keep this in mind, I will try and tell him how to manage, perhaps a good many more bees, with the labor he is now expending, by adding a few more out-yards.

ADVANTAGES OF HAVING APIARIES WIDELY SCATTERED.

I have four yards at present—about 350 colonies altogether. Three are up here in Mecosta county, and one is in Clinton county; and so much confidence have I in yards at distant points, that I expect to leave the four yards mentioned, and go 100 miles north, a year from now, and place 200 colonies there.

Why do I place apiaries so far apart? I do it to put bee-keeping on a solid, paying foundation. You know, W. Z., that bee-keeping has the name of being uncertain, not an occupation to be depended upon wholly for a living, and I am trying to overcome most of these uncertainties by placing apiaries so far apart that I will get a crop at some of the locations. Without going into particulars, all old bee-keepers know, perhaps to their sorrow, that one location may be yielding a splendid crop, while the bees are in a starving condition only a few miles away; and, that, too, with the same kind of pasturage. The weather conditions make the difference,

MANAGING AN APIARY WITH ONLY FOUR VISITS A YEAR.

You ask me to tell the readers of Review how I managed an apiary by visiting it only four times in one year, yet received, on an average, \$100 a trip for the four trips. When I made that statement at our State convention at Lansing it was simply a rough estimate, and I was quite surprised myself, when I came to figure it up carefully to find that it had averaged \$150 a visit during the two years that I have had the apiary in that location. During this time, this apiary, which is fifty miles from here, has been worked as an out-yard, and what I have so say will be in regard to this yard.

The bees are wintered on their summer stands in packing cases. About October 1st, I make a trip down there, look them over, feed any light ones until each colony has at least 25 or 30 lbs. each, and then pack them for winter in from two to six inches of chaff. They are not disturbed again I put the upper stories on the first of June.

As our honey season does not open until about June 15th, it will be seen that the bees have plenty of room previous to the flow, hence do not get the swarming fever; and, as I put two upper stories on each of the strong colonies at this visit, there is no swarming, except in cases of supersedure of queens during the honey season. This does away with all watching for swarms.

As I want my clover honey separate from the basswood, I make a third trip, the first of July, and extract what clover there is, putting back the upper stories to catch the last end of the clover and basswood flow.

What clover and basswood there is, I extract about August 1st; and, as

there is no fall flow at this yard, this ends the season.

If it were not for keeping the clover separate, it would not be necessary to make more than three visits a year.

A LITTLE HELP FROM AN ASSISTANT.

I have an assistant living about one-half mile from this yard, and he looks over the colonies, and adds up-per stories where needed, visiting the yard twice during the honey flow; once about June 24th, and again July 12th. He also helps me extract, and pack the bees for winter—in all, about eight or ten days' work. This yard is one-third mile from any house and there is no one there to watch and hive swarms when I am away.

Now for results. The crop of 1901 was 10,400 pounds, and, last year, it was 4,500 pounds, making 15,000 total for the two years. This was sold at wholesale at $7\frac{1}{2}$ to 9 cents per pound, at an average of about 8 cents, making \$1,200, or \$150 each for the eight trips.

The object of this article is to prove how unnecessary is constant handling or manipulation of the brood-nest, or practicing what some term intensive bee-keeping. When the honey harvest comes, there is but little difference between a colony that has been tinkered with, and one left to itself, provided they have plenty of honey. If there was a difference, it would not make any change necessary in this system; one would only have to add a few more colonies—enough to gather what honey the field supplies. In my case I try to keep in each yard as nearly 100 fall-count as I can. The above yard has only averaged about ninety. In the spring I buy enough colonies to make up any loss that may occur during winter, as I can buy cheaper than I can raise them.

Remus, Mich. Feb. 1, 1903.



ORGANIZATION SHOULD NOT BE ABANDONED ON ACCOUNT OF DIFFICULTIES. BY S. E. MILLER.

The discussion regarding a National Honey Producers' Association seems already to be flagging. The Review for December gave quite an exhaustive digest of the subject; and Gleanings, in the latter part of 1902, had several good articles from prominent writers; but in Gleanings February 1, the subject seems to have been dropped entirely, while the Review of January contains only two articles on National organization; and one of these seems intended to discourage the idea rather than to help push it along. I refer to the article on page 8, by H. H. Hyde.

IS THE ORGANIZATION DISCUSSION A SOAP BUBBLE?

I wish to ask the bee-keepers of America whether this subject is to be a soap bubble; to be blown up until it bursts and the breath of air within it mix with the common air, and the particle of suds drop to the floor, leaving only a mere speck? Or have we men within our ranks who are possessed of enough energy and business tact to push it on to completion? We certainly have a few of such in some parts of our country, for already they have organized in Colorado and California.

What caused me to write this, however, is that I wished to combat the pessimistic views that Mr. Hyde takes of the subject.

THERE WILL BE ENOUGH OBSTACLES WITHOUT HUNTING FOR THEM.

To be sure, if we ever get so far as to start this association, we must not expect everything to be plain sailing right from the start. There will be many obstacles to surmount be-

fore the organization gets into perfect running order; but it seems to me that Mr Hyde has gone out of his way to find some of these obstacles. He thinks bee-keepers will be slow to join the organization, and I have no doubt of it if we have enough writers who are looking for obstacles in the way, and showing up the dark side of the subject. No doubt, as he says, there will be those who will not tote fair; will grade dishonestly, etc. In short, will be chronic kickers. The remedy for such will be to kick them out. I think all organizations, fraternal and others, meet with such men; but that does not cause the organizations to abandon their purposes.

NO NEED OF COSTLY OFFICE-FIXTURES.

As to high salaried officers and expensive offices and fixtures, we must choose wisely in this matter, and try to strike the happy medium. The office should be neat, tidy and convenient, but need not necessarily be elaborate or extravagant. The General Manager and his assistants need not receive a salary that will outdo the President of a great railway system or a steel trust; but, at the same time, we must remember that a man capable of managing the affairs of the association economically and satisfactorily to the members will be one who can command a good salary elsewhere, therefore, we must not expect to secure a capable man at a meagre salary.

Mr. Hyde says we must consider the great cost of operation. In reply to this let me draw a comparison, which, at present, is only an imaginary one.

A GRAPHIC ILLUSTRATION.

We will choose a large city having a warehouse and office with a manager and his assistants. The ware-

house is clean and tidy, conveniently arranged and kept at the proper temperature to improve rather than injure the quality of the honey stored therein.

The helpers here are men who know what honey is and understand handling it. The producers who ship their honey to this warehouse are practical, well-read, intelligent bee-keepers, who put up their honey in marketable shape. The manager controls, we will say, ninety per cent. of the honey coming to the city. A retail merchant in this city goes to this manager to purchase a few cases of honey. The manager, or one of his assistants, shows him through the warehouse where the honey is stored so as to show to the best advantage. The merchant selects his honey and pays the prices asked by the manager, as he has no access to a hundred and one commission houses.

Now let us draw another picture. We have another large city where organization is unknown. Probably one hundred commission houses are doing business there. Should you write to any one of these, he will reply that they have excellent facilities for handling honey, and can secure a good price for it, while the real fact is that they probably get only a few cases each year.

The farmer-bee-keeper, who puts up his honey most any old way, ships to such houses, or has his home-merchant ship it for him. The commission man receives such consignments, and, as likely as not, stores it in a cold, damp, dark room that is none too clean, along with butter, eggs, hides, feathers, old rags, tallow, etc.

Probably I am overdrawing this a little, but I have been in just such commission houses.

A retail merchant in this city wishes to purchase a few cases of

honey. He visits commission house No. 1, and finds some honey for sale, but it is not put up in attractive form and does not show to good advantage among the articles above mentioned. He offers a low price for the honey, but it is not accepted. He then visits commission house No. 2, 3, 4, etc., in rotation with the same result.

Finally he finds one who has a lot of honey of fair quality that has been on his hands for several months, and the consignor has been prodding him up for a remittance, and, in order to get it off his hands, and make a settlement with the consignor, he accepts the low price offered.

Probably fifty retail merchants do this same thing. Probably it is oftener that the commission merchant, or his assistant, does the soliciting, going from store to store with a sample, but it all amounts to the same thing, a low price is established. The pace is set, and we have to go that gait if we want to be in it.

COMMISSION MEN BETWEEN TWO FIRES,
BUT IT IS THE CONSIGNOR THAT
IS "SCORCHED."

The commission man is always between two fires. On the one hand he must secure good prices and make prompt remittances in order to retain the confidence of his consignors; on the other hand, he must meet the opposition of his competitors. He usually goes broke; if he does, it is usually after he has left, and his consignors are "left" also. Who pays the fiddler in such cases, Mr. Hyde? The last paragraph is not meant as a slur at honest commission men, but there is more truth than poetry in the assertion.

May I ask Mr. Hyde which city he would wish to ship to if he must choose between the two?

Which one can place your honey before the retailer or the consumer

in the most attractive form and name the best price for you? Which can afford to handle it for you at the smallest percentage? The one manager having trained helpers to handle it and everything suitably arranged for handling the product of a large corporation, or the one out of fifty with untrained help, poor facilities and forty-nine competitors?

As to the wholesalers, we would be wholesalers ourselves in all the principal cities of the United States; and we could easily dispense with them entirely, by and by.

I fully agree with Mr. Hyde that we must come as near as possible to shipping our product direct from the producer to the consumer, but I fail to see what advantage the wholesaler of the present time has over our (supposed) manager, or in what way he aids us in getting our honey more direct to the consumer.

A NATIONAL ASSOCIATION WOULD BE
FOOLISH TO DEBAR BULK-COMB-
HONEY.

In alluding to bulk comb honey, Mr. Hyde says: "Then I fancy, etc." Now this I look at as a mere fancy; a conjecture. The organization would certainly be very foolish to try to debar any kind of honey that there is a demand for at a good price; and I see no reason why he wishes to fancy any such thing. This is where I think he has gone around the subject to get a look at the dark side. He refers to the demand in Texas for chunk or bulk-honey being ahead of the supply. This would be one of the missions of our association, viz., to draw from those points of the country where there is a surplus and place it where there is a demand.

Mr. Hyde discourages a honey producers' association on account of our weakness, and then turns round and proposes going up against an or-

ganization as strong as the American Can Company, a full grown and thoroughly established trust. Where is the consistency?

THE DEPT. OF AGRICULTURE OUGHT TO
GATHER STATISTICS REGARDING
THE HONEY CROP.

In regard to a honey crop report, I think we should direct our energy toward the Department of Agriculture. I think that if the importance of this matter were fully shown up to the Secretary of Agriculture he would not hesitate to incorporate a honey report along with the regular crop report, as now issued. The bee-keepers' association would have to furnish him the names of intelligent bee-keepers throughout the country who would be willing to report regularly each month. No doubt they would be expected to report on all agricultural crops at the same time. This would be very little additional expense to the Department of Agriculture, compared to what it would cost the National Bee-Keepers' Association to gather it and print it for distribution, as the cost of postage alone would be a large item to the latter.

Bluffton, Mo., Dec. 7, 1903.



A DVANTAGES OF PRODUC- ING BULK COMB HONEY. BY HOMER H. HYDE.

A few years ago bulk comb honey was practically unknown, but today there is scarcely a bee-keeper in the United States who has not heard of it and how it is produced; and it is now the principal product of the S. W. Texas bee-keepers. Its production is rapidly gaining ground, not only all over Texas, but is gaining a footing in Nebraska, Colorado and Utah. The demand for this article is rapidly

growing, keeping far ahead of its production, and to this fact bee-keepers are rapidly "catching on." There are many reasons why it is gaining a hold with both the consumer and the producer; especially the former.

THE PURCHASER GETS PURE HONEY,
FULL WEIGHT, A LOW PRICE, AND
HAS A USEFUL PACKAGE LEFT.

When the consumer buys a can of bulk comb honey he feels sure that he is getting a pure sweet, just as the bees made it, that he is getting full weight, and he knows he has bought it at a less price per pound than he could have bought section honey. Then he has his honey in a nice bucket where the honey cannot break or lose out when cut into, and when he has eaten out the honey he has a useful pail left. These are some of the reasons why the consumer prefers bulk comb honey to section honey. I am talking of the majority of the people; of course, there are the wealthy who will always buy a limited quantity of section honey because it is high in price and has a fancy look.

FIXTURES AND METHODS USED IN PRO-
DUCING BULK COMB HONEY.

Bulk comb is produced in either full bodies, or shallow Ideal supers. If the former are used it is hardly practicable to fasten in full sheets of foundation, as the frames cannot be wired, because we expect to cut the honey out, but with the Ideal frames we can use full sheets if we so prefer. Ideal supers and frames are preferred generally, because they are not so large, are not so heavy to handle, are nearer the right amount of room to give a colony at one time, and they can be freed of bees much quicker than can full bodies. To free them of bees we simply smoke down between the frames well, pry the super loose, and "jounce" it, when it will be found

that most of the bees will fall out. The supers can then be stacked up, and a hole left at the top, when in two or three hours time the last bee will have left them. Then, again, the supers and frames are nice for extracted honey, should the bee-keeper in any event desire to so use them; in fact, in putting up bulk comb it requires about one third extracted honey with which to put up the comb.

In packing bulk comb we cut out the comb nicely and place it in the cans, and afterward pour in extracted honey to cover the comb and to fill up the crevices, and in this way about one-third extracted honey goes in; and it must be remembered that this extracted honey goes in at the comb honey price.

It has been found both practicable and profitable to produce both comb and extracted honey in the same apiary; in fact, on the same hives at the same time; for many have found that it pays them to have one super of combs on top of the regular brood nest so that the queen may fill it with brood before the honey flow, if she likes, and when the flow comes, these supers catch the first nectar; and as soon as the flow is on, and the bees have commenced to secrete wax, this super of comb is lifted, and the empty frames of foundation placed between them and the brood. This is the most effectual way of baiting bees into the supers; and it will be found that where colonies are so worked, swarming is kept in check if not entirely prevented. The queen is left in entire possession of the regular brood-nest, and, by the time the flow is over, the brood will have hatched from the shallow super of combs, and the bees will have filed them with extracted honey which is just what we will want in putting up our comb honey, as we have already shown that

at least one-third of the honey must be extracted with which to pack the comb.

BEES WILL STORE NEARLY TWICE AS MUCH BULK COMB HONEY.

It has been demonstrated time and again that bees will store all the way from 50 per cent to 100 per cent more honey when worked for bulk comb than they will when worked for section honey, and many believe (the writer included) that where the bees are worked as outlined above, nearly if not quite as much bulk comb honey can be produced as could be produced of extracted honey alone; and especially does this hold good where the localities have fast flows of honey, in which a great amount of wax is always secreted whether there are any combs to build or not.

RELATIVE COST OF BULK AND SECTION HONEY.

We will now show the relative cost of bulk comb to section honey. When we buy bulk comb supers and frames we have bought them to use for years, when we buy sections they are for one season's use whether they be filled with honey or not. Then we have to get costly separators, followers, etc., that soon give out to be replaced. When we go to ship we have to have costly, glass-front shipping cases, and these cases, in turn, packed in crates for shipment. When we pack section honey we have to take lots of time and patience to scrape the sections; when we pack bulk comb honey we buy cases of cans and cut the honey out into them. When we get ready to ship we have to pay a high rate of freight on section honey, and, more, run the risk of having a good part of it badly damaged or destroyed altogether. When we ship bulk comb we get a low, extracted-honey-rate, and have the as-

surance that it will go through as safely as if it were extracted honey. When we go to prepare supers for the harvest, all we have to do to our bulk comb supers is to scrape the top bars a little, and fasten in the foundation, but with section honey we have to make up shipping cases, and sections and spend a long time putting the foundation in just right. When the supers are put on, the bees go to work in the bulk comb supers at once, and in a big cluster, thereby forgetting to swarm; but with section supers the bees have to be carefully baited and coaxed into the supers, and when they get there they are cut off into twenty-four or more small compartments, which they have to try to keep warm; and to get them sealed out to the wood we have to crowd the bees, thereby losing honey. By crowding we lose equally as much honey as we do when the supers are first put on by reason of the bees being slow to enter the sections. Just how much honey is lost by the bees being slow to enter the sections, how much is lost by crowding, and how much is lost by swarming I am unable to say, but it is considerable.

You may take the items in the production of the two honeys from beginning to end and there is not an item that is not in favor of bulk comb honey, except solely in the matter of price received; but, friends, where unbiased men have tried the production of the two honeys side by side, and carefully taken into consideration every factor, they have invariably found that they can make at least 50 per cent more money producing bulk comb, and many have placed the per cent much higher. There is another fact: not one of the men who once quit section honey have gone back to it. We were, ourselves, large section honey producers several years ago,

but have been converted, and have disposed of most of our section honey supers.

HOW TO CREATE A DEMAND FOR BULK COMB HONEY.

"You may say: 'I have no trade or demand for bulk comb honey.'" In reply I will say that all you have to do is to produce it, and offer it for sale, and you will soon have a trade that nothing else will satisfy. You may say: "But I will have to ship my honey, and there is no market for this new product." I will say take your honey to the cities, and offer it yourself, and you will find a ready and appreciative market; one that will next year demand more; and the grocerymen will have to order their supplies from you. There is no question but that a market can be found. The bee-keepers of Texas have found a market for more than they can produce, and I take it that the bee men of other States have the same intelligence and the same get up and get that the Texas bee men have.

The packages used in putting up this article are now most largely 3-, 6- and 12-pound tin, friction-top pails, that are put up in crates holding 10 of the 12-pound cans, 10 of the 6-pound cans and 20 of the 3-pound cans. There is also some demand for bulk comb in 60-pound cans, 2 in a case, the cans having 8-inch screw tops. These are sometimes ordered where the buyer desires to put the honey into glass packages for a fancy trade.

In conclusion, I wish to refute the statements made that the production of bulk comb honey was the old foggy way of honey production. I assure you that it is not, and that it requires as much skill, and as fine a grade of honey as it does for section honey. I also assure you that the consumers are behind this move, and

that it is only a question of time when the production of section honey will almost have disappeared.

Floresville, Tex., Dec. 9, 1902.



CURING FOUL BROOD IN EARLY SPRING.

BY M. A. GILL.

I have just read with much interest the splendid and timely article on "Getting Rid of Foul Brood," by R. L. Taylor. I fully endorse what he says, in the main, but very much doubt the expediency of the specialist adopting his prescribed syrup cure.

While following his plan in the matter of diagnosis and cure, in many cases, I have a few kinks that I put into practice that I don't remember of ever having seen in print; but, of course, the plan is taken from the starvation-cure.

It is a fact, patent to all, that every bee-keeper who keeps bees in large numbers, whether he lives in the South or West, and winters in the open air, or whether he lives North or East, and practices cellar wintering, has from three to ten per cent of dead colonies in the spring. There are, many times, hives that are filled with nice, straight combs and considerable honey. When a colony dies, the owner is left as the "administrator of the estate," and here is the way I use them if I know them to be unaffected.

Early in the spring, before the colony has expended much energy in raising brood, to die, I drive the bees from the foul-brood colonies into an empty hive or super, and set them away in some convenient place for 28 to 36 hours. Then, after warming up one of my hives of combs and

honey I sprinkle the bees, which, by this time, may be a little sluggish, and, after they have fed each other and become lively, I run them into the hive above mentioned.

Of course, there is nothing new nor remarkable about this cure, only that you have cured your diseased colony; and have done it at a time when they can build up rapidly, as all their brood will hatch, instead of perhaps only 40 per cent. You have also used your empty combs to the best advantage, and shut off the chances of a diseased colony being robbed out, during the dearth of spring, by perhaps two or more of your healthy ones.

Here in Colorado we cannot practice the shaking off plan much before June 15th, and if a colony has the disease to the extent that, say 50 per cent of the brood fails to hatch, that colony has not progressed much by June 15th. Just imagine the difference if it has been put on healthy combs, and furnished plenty of food, by the 1st of April. It comes up to the honey flow along with the rest of the apiary, ready to go into the sections instead of being set back on starters in the lower hive, with perhaps only bees enough so that their whole season's work is simply a struggle for existence. This plan can be practiced only to the extent of the empty hives and combs available, and I would advise its use to that extent only.

Again, every bee-keeper who is buying bees, gets more or less crooked combs and box hives in this section of the country. I have known of many bee-keepers who had as many hives of nice, straight combs piled up in the honey house as they had undesirable ones in the apiary; and they would say that when the honey flow comes we will take them out of there. My plan is this: Just at the time when the colony starts up, so it has sealed

brood in from one to three combs, I drive the bees from the crooked combs and old boxes up into a set of these desirable combs that have been fitted up for them. I then cut out what little brood they have and insert it into holes of the same dimensions cut in the combs on which they have been driven. A colony thus treated will come up to the honey harvest in just as good condition as if it had been undisturbed, and can be given its surplus arrangements, instead of a setback, which many times is the difference between profit and loss. This, in fact, is the only use I have for old combs; for, if I cannot have them filled with brood during March, April and May, to give me workers for the harvest, then I would rather make them into wax; for I would rather have starters than old combs after June 1st.

Longmont, Colo., Feb. 20, 1903.

Bee-Keepers' Review

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W. Z. HUTCHINSON, Editor and Publisher

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Flint, Michigan, March 10, 1903

N. E. France has qualified as General Manager, the office has been turned over to him, and all communications for the General Manager should now be addressed to him at Platteville, Wisconsin.

The Pacific Bee Journal has not come to this office since last November.

The Southland Queen is to be resurrected, so Mr. Atchley writes the editor of the Rocky Mountain Bee Journal.

An experienced hand to work in the apiary could probably be secured by writing to Porter A. M. Feathers, Whitesburg, Tenn.

Western Cuba is a veritable paradise for bee-keepers, so writes Dr. E. M. Davidson, of La Gloria, Cuba. He says that part of the island is rapidly filling up with American bee-keepers.

Northern Michigan bee-keepers will hold a convention, March 25 and 26, in the Town Hall, at Bellaire, Antrim county. Special rates of \$1.00 a day have been secured at both the Bellaire and the Ellis Houses.

Drone Comb is more likely to be built when swarms go together in living, or the bees become mixed up in any way, if they are hived on starters; at least, so writes Mr. S. Coulthard, of Shelby, Michigan. In my experience I have not noticed this peculiarity of mixed swarms. Have any of the readers of the Review taken notice in this direction?

A Printing Office has always held for me a sort of fascination. The click of the types, the clank of the presses, the smell of the ink, the growing piles of beautifully printed sheets, all create an atmosphere that, to me, is both soothing and invigorating. Nearly all day I work at a desk crowded into one corner of a room filled with

this inspiring "atmosphere"—and I enjoy it. Surely my lines of life have fallen in pleasant places.

Mr. R. F. Holtermann writes to Gleanings his experience in trying to have queens fertilized in confinement. He built a large tent of netting fastened on a frame-work, similar to that described in the Review two years ago. The tent was 25 feet high and 30 feet in diameter. There was no difficulty in securing the natural flight of drones, those that had never flown in the open air, but the queens worried themselves in trying to pass out through the queen-excluding metal on the outward entrances of the hives, instead of flying from the open inner entrances. Mr. Root suggests that virgin queens of the right age for mating might have been liberated in the tent at a time when the drones were flying, and, possibly have been mated, when they might have been caught and returned to their hives. A Mr. Row-some, who was at one time a student of Mr. Holtermann's, and later a lecturer on apiculture at the Ontario Agricultural College, reports having been successful in mating queens with drones in a large glass carboy. Mr. Root says that Huber Root will be at home from school the coming summer, and will turn his hand to experimenting in the apiary; among other things he may tackle this matter of securing the mating of queens in confinement. I have faith that it will yet be made a practical success. There is no question but what there have been occasional successes.

CONGRATULATIONS TO THE ROCKY MOUNTAIN BEE JOURNAL.

The Rocky Mountain Bee Journal is prospering. A look at its pages shows

that and the editor says it is. It has prospered in spite of a lack of capital at the beginning, and also in the face of what was probably a still greater drawback, in that it had to be built up over the graves of several Western journals. There was a fear that it would soon go the way of its predecessors. Time alone could overcome this terrible handicap; but Bro. Morehouse had the staying qualities that brought him through victorious. He has just added a lot of new type and material, in fact, he says he now has a completely equipped printing office, press excepted, which will be added as soon as the necessity arises. He attributes his success to his willingness to begin modestly, and gradually grow to the proportions that others would endeavor to attain at a single bound; and to the help that came from the nimble fingers of the "faithful partner of his joys and sorrows," who sets most of the type and is "chief push" on mailing day. In short, his success is almost identical with the manner in which the Review struggled into existence. I trust my Western brother will excuse me if I mention two or three reasons why he has succeeded: First, he is a practical bee-keeper; second, he is a practical printer, and third, he is well stocked with that somewhat rare commodity, good common sense. Congratulations, Bro. Morehouse. That your Journal may continue to grow, and become a power in the land for the good of apiculture, is the earnest wish of the Review.

A MAN CAN'T KNOW TOO MUCH ABOUT HIS BUSINESS.

Last December I sent out 1,000 circulars to men who had asked for samples of the Review, yet had never subscribed. In this circular I asked them, as kindly and courteously as I

knew how, to tell me why they had not given me the pleasure of writing their names in my subscription book. As I enclosed a stamped envelope, the replies came in freely and proved quite helpful and interesting reading. The reason given the most often was that they were already reading one bee journal (usually they gave the name) and that was all that they could afford. I presume that if some other bee journal should send out such a circular, some would give as an excuse that they were already taking the Review, and could not afford any more journals. If a man is making a specialty of bee-keeping, I believe it is a mistake not to take all of the journals and read all of the books on the subject. He can't afford not to read them. Ever since I began bee-keeping I have read all of the journals, and have found it profitable to do so. Many a time one little item has contained information that was worth dollars and dollars to me. In my travels about the country I find that the most successful bee-keepers read all, or nearly all, of the journals. Men who have been in the business the longest, who have kept the most bees, those who have had the most experience, and, who, it would seem, stood in the least need of advice or help from journals, are the ones who are the most anxious to read them. They have learned their value. Let no one imagine, however, that the reading of all of the journals will make of him a successful bee-keeper. Neither will the keeping of a large number of colonies, alone, lead to the same result. Successful bee-keeping does not depend upon any one thing; it is a well-rounded whole of many parts. But don't forget that any lack in one or more of the component parts makes a bad showing in the final summing up.

COMMERCIAL ORGANIZATION MAY NOT
COME IN THE FORM IN WHICH SOME
OF US HAVE EXPECTED IT.

Success does not always come to us over the pathway upon which we had expected to meet her. Many times have I felt disappointed because while I had succeeded, it was not in the manner in which I had planned. To illustrate: Some years ago, the Ontario Bee Keepers' Association gave, each year, to its members, some sort of a premium. One year it was a queen; another year it was a smoker; the next it was a bee journal, or a bee book. For two or three years I tried to have them take the Review as a premium, but, the Canadian Bee Journal, being their own journal, had rights that could not be ignored, and was given the preference. Then some good Canadian brother suggested that, as their local associations also gave premiums, why not get them to take the Review? I turned my attention in that direction, and now several of their local associations have been taking the Review for several years, and a good share of the members of the Ontario Association, who are not getting it through their local organization, are taking it and paying the retail price for it. I probably have more subscribers in Ontario than I would have had had the principal association taken it as a body, and I also get more money in the aggregate, as many members are now paying me \$1.00 where they would have paid only 75 cents if they had taken it in a body. You will see that while I have succeeded in a greater degree than I expected, it is not in the manner in which I had planned.

Now for the application: Many of us, myself included, had pictured in our minds the formation of a grand, central, commercial organization of

bee-keepers that should reach out and establish branches in something the same manner as our fraternal organizations have been founded; but the present indications are that the problem will be solved in the reverse order something after the manner in which our great industrial organizations have been formed.

For instance, there came first the individual wagon maker, then the stock company that built a factory, and finally a grand combination of factories, familiarly known as a "trust." First came the individual bee-keeper, and now, here and there, in California, Colorado and Ontario, are beginning to be formed commercial organizations of bee-keepers. The time may come when these local organizations will have become so numerous that concerted action will be needed, and then the central office will come of itself, so to speak.

Let us not be disappointed because commercial organization is coming in a different form from that in which we had planned.



FORTY YEARS AMONG THE BEES.

A few years ago Dr. C. C. Miller wrote a readable and instructive book called "A Year Among the Bees." In this book he gave advice for conducting the affairs of the apiary from the beginning to the end of the year, hence the name. The demand was such that the book was soon out of print, and I have often wondered why the good doctor did not get out a new edition. I have always attributed this to a lack of time on the doctor's part, as he once told me that, years ago, he had looked forward to the time when he might have a little leisure, but, later, he had given up all such hopes. It seems, however, that he has been using his time of late in

writing an entirely new book with a title that sounds very much like the old one, but it means forty times as much, as it is "Forty Years Among the Bees." In this the author goes briefly, but concisely, over his forty years of bee-keeping, for he has really kept bees for forty years. Not only this, but he gives us a delightfully written biographical sketch of his boyhood in Pennsylvania, his heroic struggles in securing an education, in which he boarded himself, cutting his weekly expense for board down to only thirty-five cents a week, which so affected his health that he has never fully recovered from it. I found this account of his early life so interesting that I read it aloud to the whole family. Most vividly did it recall my own boyhood's days in which I roamed the forest as free as the wild things in whose lives I became so interested.

Another very interesting feature of the book is the large number of kodak pictures with which its pages are embellished. The doctor has surely learned how to "push the button" or have some one do it for him, with considerable proficiency.

The book contains 327 pages, is nicely bound in cloth and gold, and published, at \$1.00, by Geo. W. York & Co., Chicago, Ill.

I have not yet said one word about what is probably the most important part of the work, that is, the main body that gives the solid instructions regarding actual work in the apiary. There are two reasons for this: One is the lack of room in this issue to do the sub set justice, and the other is that I have not read it. I have done this, however, I have dipped into it here and there, just enough so that I feel warranted in saying that it is the master-piece of the author's forty years among the bees. I shall read

it, however, every word, and future issues of the Review will contain frequent comments upon what I have read in "Forty Years Among the Bees."

SUCCESSFUL COMMERCIAL BEE-KEEPING.

Nearly all bee-keeping is commercial bee-keeping in the sense that it is followed for the profit that it affords. A friend of mine who receives, I have been told, a large salary as superintendent of a manufacturing concern, is also an amateur bee-keeper. He was once enumerating the different points he kept in view that his profits might grow larger and larger, when I said to him, "Bro. D., I thought you were keeping bees for pleasure, and did not concern yourself very much about the profits." His reply covers the ground of nearly all amateur bee-keeping. He said, "Bro. H., it is true that I am keeping bees for pleasure, but the greater the profit, the greater the pleasure." With the majority of us the chief end of bee-keeping is the profit. I don't deny that there is a rare pleasure in the work, as there should be, and is, in all work except to the man who has missed his calling, but the main object in keeping bees is to gain a livelihood, to secure money with which to buy the necessities, comforts and pleasures of life. With the men who are keeping bees for this purpose I wish to have a heart to heart talk. It may be somewhat rambling, and several points may be brought up, but they will all have a bearing upon the subject under discussion.

First a few words about health. Of course, good health is necessary in all callings. The sick or sickly man can not accomplish much. If you have lost your health, the first step is to regain it. Medicine is sometimes necessary, but, oftener, it is some

needed change in the manner of living. The food we eat, the liquids we drink, the clothes we wear, the air we breathe, the exercise we take, our habits of life, make or mar us physically; and a physical wreck eventually becomes a mental wreck. Of course, the Review can not go into any elaborate discussion of the health problem, but please allow one little illustration. Almost every fall, for several years, I have been laid up with a sort of rheumatic fever. Two years ago we began using distilled water, and not one sick day have I seen since. I have never felt fresher, stronger nor younger. For some other person, or locality, something different might have been the needed panacea. If you are not well, the first step is to go resolutely to work to learn the cause, and effect its removal. There are several journals and books devoted solely to health, to teaching right methods of living, and a few dollars spent in securing them, and a few hours in studying them, would probably do more towards restoring your health, provided the advice is heeded, than would ten times the amount spent in medicines. A physician's advice and medicine are often needed, but no one knows better than he, that were the laws of health well known and heeded his services would seldom be required. Ill-health is largely the result of ignorance. Study and remove this ignorance. Become as earnest and enthusiastic in regaining and keeping your health as you are in securing a big crop of honey. Then you will eventually put yourself in a condition so that you can secure the big crop.

If you are well and strong, the next step is a thorough examination of your business to see if some radical changes are not needed. In the first place, are you keeping enough bees?

Are you a farmer trying to manage an apiary? Or, are you a bee-keeper trying to run a farm? If you are, why do you do it? Is it because bee-keeping is so uncertain? If so, why not drop bee-keeping and turn your whole time, money, energy and brains into farming? I have no faith in a business that has to be bolstered up with something else. As I have said before, I would throw away the business and keep the bolster. Perhaps your location is not suited for bee-keeping. Then why cling to it, and waste the best years of your life trying to eke out a living when the natural conditions are against it? If the conditions can be changed, profitably, then change them, if not, then I would change the business or the location. Sometimes a locality may not afford the right conditions for successful bee-keeping on a small scale, or with a single apiary, yet, by scattering several hundreds of colonies around the country, 100 in a place, but the apiaries several miles apart, fair success may be attained. This very county, right here, is an illustration. I know of no spot within its borders that might be called an ideal location, yet, by the course that I have mentioned, and the adoption of methods that enabled him to do nearly the whole of the work himself, Charles Koeppen cleared \$2,000 a year. Mr. Townsend, in his excellent article in this issue of the Review, touches upon a most important point in this connection, and that is the establishment of apiaries many miles apart, thus minimizing the dangers of a total failure. He has also adopted methods that allow of the carrying out of his plan. They are very simple, nothing particularly new, simply large hives, plenty of surplus room and the use of the extractor, but they fit his system to a T. Everybody may not be so situated, or have the desire, to carry out his plan

to such an extent as to limit the number of visits to only four a year, but, as I said last month, with the systems of electric railways that are so rapidly spinning their network of rails over the land, or even by the use of the steam cars, one may have many apiaries widely located. Once more, friends, look about you, study yourself and your surroundings, try and comprehend the conditions, and to make the most of them.

Perhaps you will say that you can't establish out-apiaries, that you haven't capital, or something of that sort. There are few things, within the possibilities, that a man can't do if he really wants to; if he tries hard enough; if he is earnest and enthusiastic and goes at it believing that he will succeed. Many times in my life have I met obstacles, trials, troubles, and disappointments. Many times have I felt like exclaiming, "Oh dear, if things only weren't in the shape that they are, I might do something!" Then the thought would come to me: "Men who succeed are the ones who meet and overcome just such obstacles and troubles; those who fail are overcome by the stress of circumstances." Then I would up and at it again; and circumstances must be desperate, indeed, in which a courageous, resolute man cannot even wring victory from defeat. You can start out-apiaries if you will. That alone will not make your fortune, but it may be a step in that direction. Find out first if you better do it. As I have said before, the temptation is very great for me to start a series of out-apiaries, but I have decided that it isn't best for me. All of my life I have had to fight the disposition to change from one thing to another. As a boy I often tore to pieces a half-finished machine of some kind that I might have the materials with which to build something else that

had struck my fancy. When I became interested in something new, I was terribly interested. Everything else became secondary. The trouble was that the next day might find me all carried away with some other new thing. Everything was so interesting to me—and is yet. As I came into my teens I, at different times, wanted to be a musician, a school teacher, a reporter, a machinist, a locomotive engineer, an author, and I don't know what all, but, in my twenty-first year I finally concluded that I must choose some one thing and stick to it. I chose bee-keeping, but have wandered about in that quite a bit. I have produced extracted honey, comb honey, reared queens, made apiarian exhibits at fairs, wrote for the apicultural press, and wound up by publishing a bee journal. I think that I can do more good in that line (but probably not make so much money) than by establishing and managing out-apiaries; and I do hope and work that I may live to see the day when the finger of uncertainty can no longer be pointed at apiculture; when bee-keepers will compel success by keeping large numbers of bees and scattering them around in desirable locations.

Bee-keepers, do you realize the possibilities that are before you, and realizing them, are you ready to make the most of them?

NEEDED CHANGES IN THE CONSTITUTION OF THE NATIONAL ASSOCIATION.

That the constitution of the National Association of Bee-Keepers needs some amendments there can be no question. Had the constitution been more definite upon some points, all of the unpleasantness of the past year would have been avoided. Had parliamentary usages been strictly followed, it is likely that it would have been avoided as it is, but few of

us are parliamentarians. If the constitution says that certain acts shall be performed in certain ways, disputes will be avoided. Heretofore, amendments have been gotten up by some committee at the annual convention, submitted to the convention, approved by the convention, and then voted upon at the December election. The objection to this method is that the work is done too hastily; and, perhaps, by some who have given the matter little, or no thought. At a convention the air is full of hurrah boys; and, even if the best men should be placed upon that committee, it takes them away from the convention, which is a loss to all concerned. From several sources there has come the suggestion that the board of directors, and the executive committee, now take up this matter among themselves, and proceed, by correspondence, to draft such amendments as their experience suggests are needed, and get them all in shape for presentation at the convention that will be held the coming autumn. In this way all points can receive careful consideration; and, if the matter is given publicity through the journals, the officers can have the benefit that will come from criticism by the great mass of members.

One of the most urgent of the needed changes is some ruling regarding nominations. The constitution is entirely silent upon this point. Heretofore it has been the almost universal custom for us to vote for whom we pleased for directors or general manager. The objection to this is that the same men go in year after year. There may come a time when we may wish to vote some man out of office, but we can't do it unless there is some way of knowing for whom else to vote. Last December there was no election in two cases, simply because there were so many candi-

dates among which the votes were scattered. I greatly favor a plan proposed last summer when this point was being discussed. It is as follows: In September let the secretary give notice in all of the bee journals that he is ready to receive nominations for the officers to be elected. Let this notice state that nominations will be received all through the month of October. Let the secretary count the votes the 1st of November, and the names of the two persons receiving the highest number of votes for each office to be immediately published in all the bee journals as the candidates for election in December. In one sense this would really be an informal ballot, in which every member could take a part; and in the election following they would again have a choice of the two candidates for each office.

It has been suggested that the present number of directors is too large. The greater the number, the slower and more difficult becomes the transaction of business. If there were 50 directors, it would be well-nigh impossible to transact business—certainly be very slow and expensive. Other things being equal, the smaller the body of men, the quicker and more effectively is business conducted. The number ought to be large enough, however, so that there would be little likelihood of any question being decided in a one-sided manner. By reducing the number of directors it is possible that the Association might eventually pay the expenses, or a share of them, that are incurred by the directors in attending the annual convention. Over in Ontario their Association pays the expenses of all of the directors in attending the annual convention. If the directors could hold a board-meeting once a year, many things could be accomplished that are now very difficult. There is

nothing like a face to face meeting. It strikes me that six or eight directors could do the business as well as a dozen could do it. These six should, however, be the very best that there are in our ranks. I would not favor a sudden reduction to that number. Suppose that we elect only two directors, instead of three, each year until the number is reduced to eight, or to six. I think that the directors ought to be well scattered over the country. A man living in New York is quite likely to have some different views regarding apiculture than would one whose home is in California or Texas. Conditions differ in such widely separated parts of the country. I doubt the wisdom, at present, at least, of passing any amendments restricting the number of directors that shall reside in one State. If we should gradually cut down the number to eight or six, it is quite likely that, eventually, no State would be left with two directors. If we should see the need of such a ruling at that time, it could be made. While I don't know as any harm has come from occasionally electing a director to the office of president, I do think that, considering the excellent material in our ranks, there would be no objection to a rule prohibiting directors from holding any other office in the Association. The directors ought to have power, as they now have, to remove the general manager for cause, and to fill the vacancy, and, in addition, they should have power to fill a vacancy caused by the resignation, death, or disability of the general manager. There ought also to be some rules as to whom resignations should be sent. As the executive committee now has power to fill a vacancy in the board of directors, I should think that any resignation of any members of the board should be sent to the president, and passed upon by the whole committee.

In like manner, as the board of directors has power to fill a vacancy in the executive committee, I think any resignation of a member of that committee ought to be sent to the chairman of the board, and then the whole board should act upon it before electing a successor. As the board has, or should have, power to remove the general manager and fill the vacancy, I think the resignation of the general manager ought to go to the chairman of the board, and be passed upon by the whole board. In other words, the resignation ought to be sent to the body that has power to fill the vacancy. With such a rule as this, all of our trouble of last year would have been avoided.

It has been suggested, also, that the general manager hold his office three years, the same as the directors hold theirs. I think this a good idea. A man scarcely gets the work well in hand, before the year is gone.

At present the constitution says that in order to have a change in the constitution, notice must first be given at the annual convention, and then it can be voted upon at the December election. I would suggest that a proposed amendment must first be approved by the annual convention—instead of simply a notice given. As it is now any member can bring up some trivial matter, give notice at the annual convention, and the manager must put the matter before the whole membership for a vote. Any matter that would not meet the approval of the annual convention is not of sufficient importance to require the vote of the whole membership. In short, the annual convention should be a committee that would cut off trivial or undesirable matter that might otherwise be dignified with a vote from the whole membership.

The above are some of the amendments that have come to my mind, or

been suggested to me by others. I shall be thankful to hear from any member with suggestions, criticisms, or additional changes.

EXTRACTED

A NATIONAL HONEY EXCHANGE.

A Plan Outlined for a National Organization.

Something About the California Fruit Exchange.

Last month I copied from the American Bee Journal an article by Prof. A. J. Cook, in which he gave reasons why National organization of a commercial character was needed by the bee-keepers of this country. At the close of that article he promised to give an outline of a plan for such an organization. Said outline appeared in the American Bee Journal for Feb. 12, and is as follows:

"In a late number of the American Bee Journal I gave what seems to me a fair description of the signs of the times in regard to combination, whether of capital or work and the great importance of co-operation in all lines of work. I there stated that I would in a succeeding article outline what seemed to me a feasible course for the bee-keepers to pursue. This is not visionary or a mere theory. It is indeed what has already proved a success with the citrus growers of Southern California. I need not, however, say Southern California now, because our Citrus Fruit Exchange has already entered and captured central California, and is even gaining a foothold in the northern part of the State. What I give then, is no theory, it is a sort of evolution. Although the Citrus Fruit Exchange started nine years ago it is today an

acknowledged success, and all agree that it has been the salvation of a most important industry of our State.

California is peculiarly handicapped in the circumstances attending her fruit industry. We are over 2,000 miles from market, and the freight charges on fruit to the Eastern cities are about one dollar a box. We had to compete with Italy and other sub-tropical and foreign nations where citrus fruits were produced. These transportations was by water, and, so, very cheap. Our superior intelligence, energy and enterprise made it possible for us to eclipse them to a marked degree in the quality of the fruit, but with railroads against us, and their determination to 'charge all the traffic would bear,' it was impossible for us to win success except through co-operation. As a result we have today the Southern California Fruit Exchange. By the aid of this the citrus-fruit growers of our section have won a substantial success, and I doubt if any rural industry in the country can make a better showing, despite the great disadvantage of distant market and railroad transportation.

A HONEY EXCHANGE POSSIBLE.

For an exchange in any line to succeed demands a very intelligent constituency. Our citrus growers of Southern California are largely educated men. They read, think, and many had wide business experience before they commenced the work of fruit culture. Such co-operation as the Exchange implies must be founded upon faith in each other, absence of distrust and suspicion, and a willingness to pay for first-class business talent, what other lines of business are willing to pay, and do pay. Our bee-keepers, to be successful, must read and think. As a general thing

the apiarists are a reading, thinking people. If I am right in this conjecture then they will be more free from suspicion and more ready to act upon recognized business principles; freer from distrust and suspicion, and must agree to procure the best business talent and ability, even though they do have to pay what seems an exorbitant price for it.

I feel certain that in time we shall have a National honey exchange. Yet, as in our government relations, the different States will act separately, and each will have its own exchange which in many respects will be quite independent of the others, though all will be organically united and one man of signal ability who is manager of the great National exchange will have general direction over all the subordinate exchanges; that is, the exchanges of the separate States. This general manager would have his headquarters in some great central market. I should suppose probably Chicago would be headquarters for the National exchange.

Of course, this general manager would have his advisers. This might be a sort of executive committee appointed from the various States, and would be composed of men of marked business ability. It would very likely be better to have this executive committee of these advisers of the great business manager made up of the business managers of the different States, in which case, of course, meetings could not be held oftener than annually, and so the business would have to be largely by correspondence. In these days of typewriters and telephones this would be no serious handicap.

The work of this general manager would be chiefly distribution and marketing. He would have his ear constantly to the ground, and would

know exactly the status of all the markets of the country, and thus he would direct from the different States the sending of honey to market in a way that the best distribution would be accomplished. This would make glutting of the market an impossibility. He would have charge of appointing salaried salesmen in all the great cities, who would, under his charge, distribute the honey as the needs of the various sections require. They would also look out for the distribution among smaller places in the near vicinity of the city or town. They would also be constantly developing markets.

These various salesmen would be in constant communication with the head manager, and thus he would know through them the condition of the market in all sections of the various States. Thus his office and duties would be much the same as that of the general manager of the Southern California Fruit Exchange. The latter, however, meets his advisers once a week during the busy season, while, as stated above, the general manager of the honey exchange could hardly meet his advisers oftener than once a year.

This general manager ought to be a man of very superior business ability. Such services could not be secured except at a large salary. I should say that \$10,000 would be none too much for the right man to fill this place. He should have business instinct and capacity that would more than pay his salary many times over during a single year.

THE STATE HONEY EXCHANGE.

Each State exchange likewise must needs have a business manager, also of unusual business capacity. He would take charge of the exchange for the State, and would, I believe, be

the one from the State to advise with the general National manager. He would have advisers also. These should be honey-producers, and should be men of business tact and shrewd business management. The duty of the State business manager would be to keep in close immediate touch with all the county or local exchanges through the State. He would also be in constant communication with the National manager. He would direct the various local exchanges when, how, and where to ship honey, and would arrange all the details. It is possible that it would be wise to give into his hands a portion of the marketing in his own State, which, of course, would be done only after the closest conference with the National manager. He and his advisers would arrange all the details of packing, grading and shipping, and in case it was found desirable to advance the money to bee-keepers who were unable to wait until the sales were made, he would be the one who would look after the details of this arrangement.

The third wheel in this great system would be the local exchange. Each would have its general manager or superintendent, who might be, and I think should be, the adviser of the State manager. He would be the go-between connecting the State manager with the individual honey-producers. He would also look after the details of the local exchange, such as storing of honey, packing, shipping, labeling, etc.

ADVANTAGES OF THE SYSTEM.

The great advantage from such a system of distribution and marketing would be that of all such combinations—the producers would have something to say as to the price which should be received for their product, and thus would not be called upon,

or at least would not be compelled, to take less for their product than the actual cost of producing it. At present the bee-keepers, like all other agriculturists, have nothing to say regarding what their wares shall bring in the market, no more than they have regarding the price of such articles as they may wish to purchase. This seems a great wrong, and by such combination as this exchange would secure, the agriculturist can win a right which in all the world's history thus far he has been deprived of.

Again, this system of marketing would enable the producer to arrange an intelligent and wise distribution, so that while no section was crowded by a surplus of his product, all sections would at all times be supplied with a sufficient amount for the needs of all the people. Heretofore there has been no system at all in this matter of distribution of products. Who can doubt but that a wise reform in in this matter would be fraught with the greatest results to any industry that should secure it?

A third advantage would be the fact that the honey would be all put up and graded in a uniform and excellent style, so that buyers would be attracted as they cannot be where much of the product is sold in a form that is neither attractive nor economical. The packing could also be done very much cheaper. The grading also would be perfect, and thus every man's product would be sold on its own merits. This improvement in style of packing and this thorough grading would of necessity increase the demand for the product everywhere, and would result in greatly increased sales. The reduction in cost of packing has been about one-third in the fruit exchange. That it would be less in the honey exchange I see no reason to believe.

Still another advantage from this system of doing business would be a combination in the purchase of supplies, and thus all supplies would be bought at uniform rates, would be uniform in style, and all would be of the very best style, pattern and finish. Here again the Citrus Fruit Exchange has made a great advance over the experience of the orange and lemon growers before the association was founded.

In the case of the Citrus Fruit Exchange the cost of marketing, including telegrams, all clerk hire, everything, is a little less than three per cent, and is done much better than it ever could have been through commission men. I see no reason why the same large gains may not accrue to the bee-keepers if they can only consent to form such an organization as is outlined above.

Again, the losses during the nine years of the history of the California Citrus Fruit Exchange where about thirty million dollars worth of fruit has been sold, have been less than one-fourth of one per cent. We sometimes hear it said that farmers can not do their own business. I would like to know of a business firm or any organization or association, the country over, that has done business of such magnitude with such an infinitesimal loss as the Citrus Exchange.

If our bee-keepers will only consent to act together and will secure men of that large business capacity that will enable them to run successfully the large undertaking, I see no reason why an abundant success may not be secured. The scheme is a grand one, and must develop slowly. California, Colorado, and Arizona, ought soon to be ready to carry it out, and with them as examples we may hope that the other States will soon wheel into line."

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GOOD MAN WANTED.

I would like to secure the services of a young, married man, one who has had some experience with bees. I wish him to come and live on my place and take a partnership interest in my business. I have a good farm with good buildings, and 200 colonies of bees, and I wish to establish out-apiaries if I can get a good partner in the business. No capital will be required and it will be a good chance for the right kind of a man.

W. E. FORBES,

2-03-1t

Plainwell, Mich.

Please mention the Review.

TYPE WRITER FOR SALE.

A friend of mine has made a change in his business whereby he no longer has any use for a Smith Premier No. 2 typewriter for which he paid \$100 about a year ago, and he now offers the machine for sale at only one-half what it cost him—that is for only \$50. It can scarcely be distinguished from a new machine, and is really as good as new except for the ordinary wear of one year's use. There is a metallic case goes with the machine. The machine is here in my office, and I have tried it and found it to be all right in every respect, and I can send a sample of the work to any one who wishes to see it. In my estimation this is a bargain. A writing machine, the best there is made, for only half price.

W. Z. HUTCHINSON, Flint, Mich.

A Snap

IN BEE SUPPLIES

I have the following articles in bee supplies which, owing to other business requiring my attention, I will close out at less than cost. Thirty of Root's 1½ story, 8-frame, Dovetail hives with shallow extracting frames in supers and with Hoffman brood frames, at \$2.15 each; 300 made up Hoffman brood frames at \$2.15 per 100; 400 shallow (5½ deep) extracting frames at \$1.50 per 100; one Daisy Foundation Fastener, without lamp, 65 cents; ten Bee entrance guards at 10c; ten 8-frame zinc honey-boxes at 10c each; two Cogshall bee brushes 10c each; five mosquito-bar bee-veils, the lot for \$1.00; 50 Doolittle cell protectors, the lot for 50c; 200 2ct size Benton queen cages (with candy) for \$3.00; 50 nice, clean all-worker brood-combs, in Hoffman frames for \$5.00; 12 copies Hutchinson's late edition of Advance Bee Culture, the lot at 40c each. Order at once if you want these goods. Can ship at once. Bees, queens, and nuclei for sale.

ARTHUR T. DEWITT,

Sang Run, Md.

2-03-1f

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer

W. Z. HUTCHINSON, Flint, Mich.

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Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-26, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. They have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902.

Mr. Atchley, Sir:—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 140 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm each stored 28 pounds of honey; so you see I have 11 colonies from one, and 56 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen or heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 56 pounds of honey. If any of you scientific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I want no letter. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3- and 5-banded Italians, Cyprians, Alamos, Holylands and Carniolans, bred in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$9.00 per doz. All other months, 75c each \$4.25 for six, or \$8.00 per doz. Tested queen of either race, from \$1.50 to \$3.00 each. Breeders from \$1.50 to \$10.00 each. 1-2- and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY

P. O. Box 79, Beeville, Bee Co., Texas

Salzer's Rape gives Rich, green food at 5c a ton

BUY NORTHERN CROWN SEEDS

FARM SEEDS

SALZER'S SEEDS NEVER FAIL!

1,000,000 Customers

Proudest record of any seedsman on earth, and yet we are reaching out for more. We desire, by July 1st, 200,000 more and hence this unprecedented offer.

\$10.00 for 10c.

We will mail upon receipt of 10c. in stamps our great catalogue, worth \$100.00 to any wide awake farmer or gardener together with many farm seed samples, Teosant, Beardless Barley, Bromus, Rape, etc., etc., positively worth \$10.00 to get a start with, upon receipt of but 10c.

Please send this ad. with 10c. to Salzer.

in stamps.

JOHN A. SALZER SEED CO. LACROSSE, WIS.

SPELTZ— What is it? Catalog tells.

catalog alone, 5c. Send at once.

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co. Sheboygan, Wis.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$70.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross
Shipped from New York or from factory.

Send for catalogue to

J. H. M. COOK, 62 Cortland St., N. Y. City

Please mention the Review.

Victor's Superior Italians.

Owing to extremely unfavorable weather for queen rearing, and the increasing demand for my superior strain of bees, I will have to place the price at single queen rate until further notice.

W. O. VICTOR

Queen Specialist,

Wharton, Texas.

"THE QUEEN BEE"

Now in the hands of the printers, tells how to rear the

BEST OF QUEENS;

tells the cause of and remedy for injury in shipment; how they may be DIRECTLY INTRODUCED with positively no risk of loss or injury. It gives much other valuable information. It describes

The 20th Century Double-wall, Ideal Combination Hive,

the best all-purpose hive in existence. It tells how, by combination, a single-wall hive is converted into a complete, double-walled hive without extra cost. Order a copy today. Advance orders received for 12 two-cent stamps.

T. K. MASSIE

2-03-41

Tophet, W. Va.

We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest

Send for Catalog



Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

Great Clubbing Offers.

Here is a list of magazines, together with the regular prices at which they are published:

CLASS A.

Frank Leslie's Pop. Mo.	\$1.00
Everybody's Magazine	1.00
Good Housekeeping	1.00
Woman's Home Comp'n	1.00
Success	1.00

CLASS B.

Review of Reviews	\$2.50
World's Work	3.00
Country Life	3.00
Current Literature	3.00
New England Magazine	3.00
Art Interchange	4.00
The Independent	2.00
Lippincott's Magazine	2.50

If you subscribe for one or more of these magazines in connection with the Bee Keepers' Review, I can make the following offer:

Success, and the Bee Keepers' Review, for only	\$1.75
Success, and either Frank Leslie's Popular Monthly, or Everybody's Magazine, or Good Housekeeping, and the Bee Keepers' Review, for only	2.25
Success, and any two magazines in class A., and the Bee Keepers' Review, for only	3.00
Success, and any one magazine in class B., and the Bee Keepers' Review, for only	3.50
Success, and any two magazines in class B., and the Bee Keepers' Review, for only	5.00
Success, and any three magazines in class B., and the Bee Keepers' Review, for only	6.50
Success, and any one magazine in class A., with any one magazine in class B., and the Bee Keepers' Review, for only	4.00

Magazines will be sent to one or different addresses as desired.

W. Z. HUTCHINSON, Flint, Mich.

PAGE & LYON, MANUFACTURERS OF AND DEALERS IN
APIARIAN SUPPLIES, NEW
LONDON, WIS. WRITE FOR
OUR FREE, NEW, ILLUSTRATED
CATALOG & PRICE LIST.

Advanced Bee Culture

Is a book of nearly 100 pages (the size of the Review) that I wrote and published in 1891; and I will tell you how I gathered the information that it contains. For 15 years I was a practical bee-keeper, producing tons of both comb and extracted honey; rearing and selling thousands of queens, reading all of the bee books and journals, attending all the conventions and fairs, visiting bee-keepers, etc., etc. Then I began publishing the Review, and, for several years, each issue was devoted to the discussion of some special topic; the best bee-keepers of the country giving their views and experience. *ADVANCED BEE CULTURE* is really the summing up of these first few years of special topic numbers of the Review; that is, from a most careful examination of the views of the most progressive men, and a thorough consideration of the same in the light of my experience as a bee-keeper, I have described in plain and simple language what I believe to be the most advanced methods of managing an apiary, for *profit*, from the beginning of the season through the entire year.

A new and revised edition, which includes the improvements of the past ten years, is just out; and is as handsome a little book as ever was printed. The paper is heavy, extra machine finished, white book, and there are several colored plates printed on heavy enameled paper. For instance, the one showing a comb badly affected with foul brood is printed in almost the exact color of an old comb. The cover is enameled azure, printed in three colors.

Price of the book, 50 cts. The Review for one year, and the book for only \$1.25.

W. Z. Hutchinson, Flint, Mich.

50 Cents

That's all it costs to become a regular reader of the

Rocky Mountain

Bee Journal

Let your subscription begin with the September number and you will get a full and detailed report of the recent Colorado Bee Keepers' convention, worth many times the cost of a years' subscription. Address the publisher,

H. G. Morehouse

Boulder, Colo.

100 Per Cent

Profit from bees. U. S. Honey Report of 1899, for California, 1901 with 300 cars of honey, we estimate a profit of 130 per cent. on the investment. By this same report the Eastern States show an average profit of only 50 per cent. on investment.

100 colonies in a good year will make a clear profit of \$1,000. (and in off years are no expense.) Live in the city. Have your apiaries on electric car lines. The

Pacific Bee Journal

only 25 cts a year. Clubbed with the Review (new or renewal) for \$1.25.

The Pacific Honey Producers, are incorporated with \$50,000 capital. Stock is \$1 a share. Its property is a manufacturing plant, honey ware houses and apiaries. Prospectus on application. Live in the East. Have your apiaries in California. Address

Pacific Bee Journal,

237 E. 4th St. Los Angeles.

WINTER

Losses are not always the result of the same cause. They may come from starvation; from poor food; from improper preparations; from improper protection; from a cold, wet, or possible, a poorly ventilated cellar, etc. Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points, consult "ADVANCED BEE CULTURE." Five of its thirty-two chapters treat as many different phases of the wintering problems.

Price of the book; 50 cts.; the REVIEW one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON, Flint, Mich.

Dittmer's Foundation

Retail - Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, because it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

**Working wax into foundation
for cash**

a specialty. BEESWAX ALWAYS WANTED at highest prices. Catalog giving

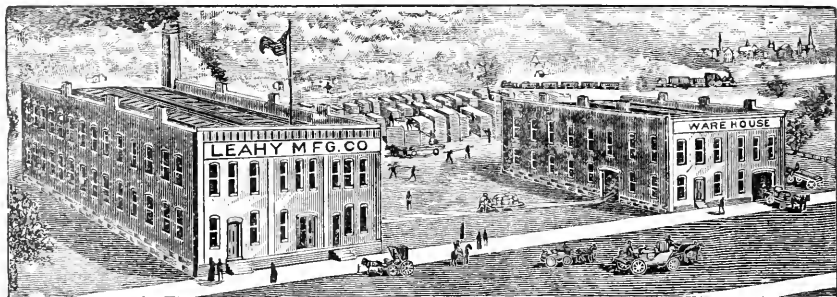
Full Line of Supplies

with prices and samples, free upon application. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinued separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price: only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,
Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee - Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,
JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat - bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side - walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*. Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,
SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Back Numbers

Of the Review needed to complete our file are as follows: Jan. 1889; Jan. 1890; March, August 1891; Feb. 1893; Sept., Nov. 1895; May, Sept.; 1899; Feb., Nov., Dec. 1900. Any one having any of these issues that they are willing to dispose of will please address WILMON NEWELL, College Station, Tex. 2-03-6t

CAR LOAD BUYERS

Of Bee Hives, and all kinds of bee supplies as well as consumers, will find it to their interest to let me know their needs. I sell to the jobbing trade all over the world. I have financial interests and business contracts with two of the largest factories in the United States, as well as being sole proprietor of a small plant of my own. One of my factories is cutting 12,000,000 feet of lumber this year. I want your business. Address, for a catalogue,

W. B. PUTNAM, River Falls, Wis

THE

A. I. ROOT CO.,

10 VINE ST., PHILADELPHIA, PA

BEE-SUPPLIES.

Direct steamboat and railroad lines to all points. We want to save you freight.

Please mention *the Review*.

ALFALFA.

Give it a trial. Seed for a large plot, and directions for 25c. Add stamps if Khiva Sunflower is wanted.

4-03-tt

Wm. C. AIKEN, Angwin, Cal.

Do You See This?

Have you ever solved the problem "what is the *best* all-round household remedy?"

I have carefully studied this problem during 18 years of general practice and think I have solved it. I believe, and my customers do, that there really is no other remedy so generally useful, or that gives such uniform satisfaction as

YELLOWZONES

Beats all how my customers *stay by me* year after year; many most prominent bee men, including Pres., Sec., Gen. Mgr. and Treas. of N. B. K. A. and many members, are among my regular customers—have been for years, and *you know they wouldn't be if Yellowzones were not* "Select Tested." I shall be glad to serve you also.

If you keep but one Remedy in the house it should be **YELLOWZONES.**

\$1.00 per box; Trial size 25 cents.

Sample on request.

Your money back and **Another Box** if not satisfied.

W. B. House, De Tour, Mich.

Superior Stock.



If the advertising that I have been doing the past three years has not convinced you that the Superior Stock that I have been offering for sale is really superior, then it is the fault of the advertising, for the stock is really all that I claim for it. I have guaranteed safe arrival, safe introduction, purity of mating, and satisfaction to the extent that a queen may be returned inside of two years, and the money will be refunded, together with 50 cts. to pay for the trouble. No other breeder makes any such guarantee. I have sold hundreds of queens under it. I do not know of a single dissatisfied customer, while I have dozens of letters from men telling of increased results from the introduction of this stock, and asking: "Can I get any more queens of you like the one I bought two years ago?"

Although the price of these queens is \$1.50 each, I have never been able to keep up with the orders. Most of my customers wait until spring before sending in their orders, and then have to wait from four to eight weeks. A few are far-sighted enough to send in their orders in the fall or winter, and these get their queens in May or June, in time to be of some service to them the same year. Send \$1.50 now and I'll book your order, and you will get your queen early in the season.

The price of a queen alone is \$1.50, but I sell one queen and the Review one year for only \$2.00. When you send in your renewal to the Review, send another \$1.00 (\$2.00 in all) and your subscription will be put ahead one year and your order booked for a queen.

W. Z. Hutchinson, Flint, Mich.

You Require
I Supply **Perfect Queens.**

My queens took first prize at the State Fair, in Nov. 1902. I have piles of testimonials from leading bee-men to the good qualities of the queens I sent out last season. Under the date of July 3, 1902, F. A. Lockhart, of Caldwell, N. Y., writes: "The dozen queens arrived all alive, and are a FINE LOT;" and again later on, "We like your stock, it is O. K."

I am adding extensively to my queen rearing plant, breeding in separate apiaries Golden and Leather colored Italians (both strains are red-clover workers), Carniolans and Holy-lands, of choicest strains. My Golden stock is from one of Doolittle's choicest breeders. All my queens are raised under the best possible conditions, from extra good honey-gatherers. Queens ordered now will be mailed when desired. Untested, \$1.00, or \$9.00 per dozen; tested, \$1.25; a few choice breeders at \$2.00 each.

GEO. J. VANDE VORD, Daytona, Fla.

Please mention the Review.

HEDDON CASES.

I have over 100 of the Heddon, old-style section cases, that are well-made and painted, have been well cared for, and are practically as good as new that I offer at 15 cts. each.

W. Z. HUTHINSON, Flint, Mich.

Please mention the Review.

—If you are going to—

BUY A BUZZ-SAW,

write to the editor of the REVIEW. He is a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Please mention the Review.

Make Your Own Hives.

Bee-Keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

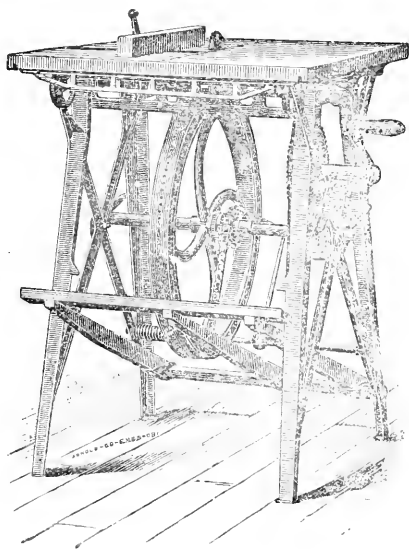
Machines on trial.
Send for Catalogue.

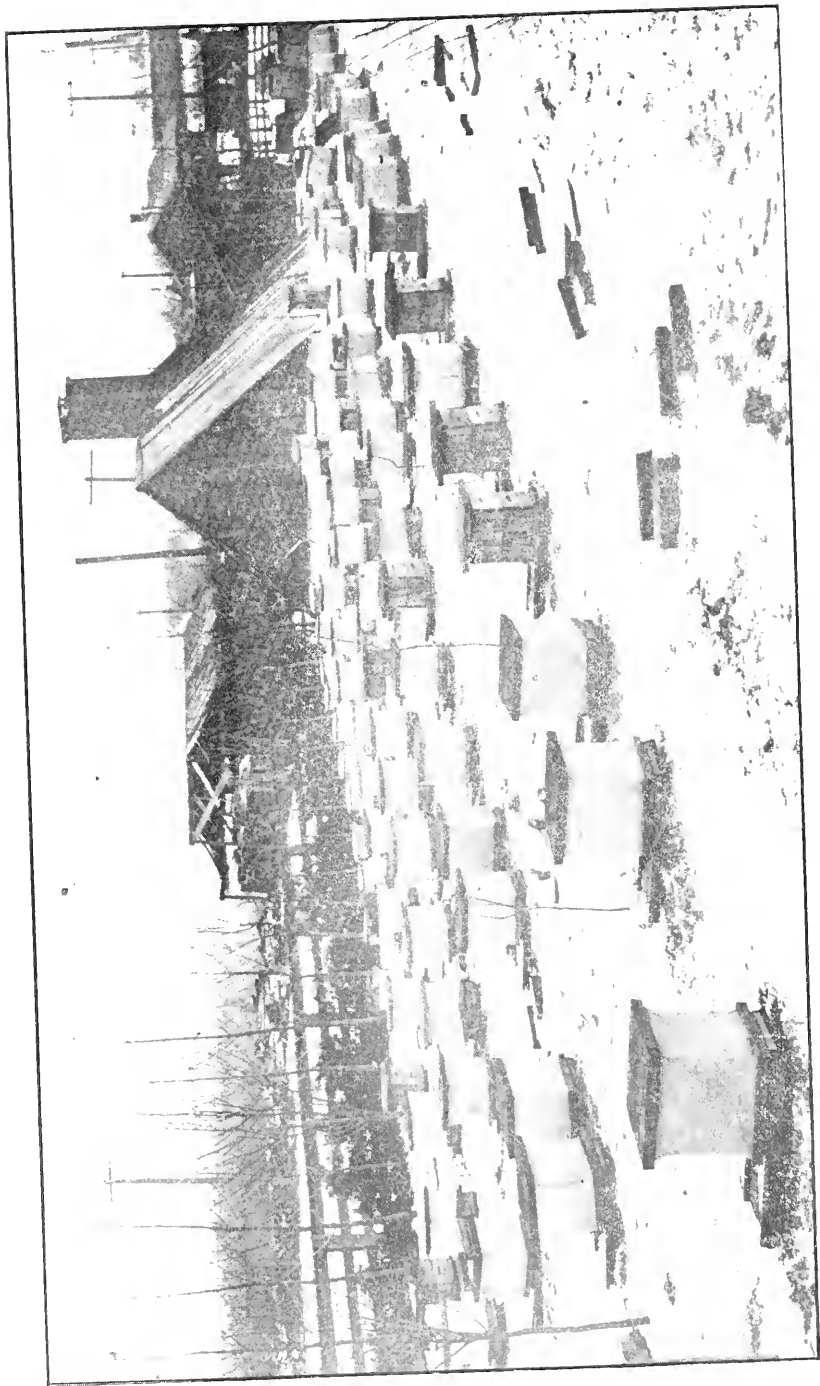
W. F. & J. O. BARNES CO.,

384 Ruby St.,

Rockford, Ills.

7-02-24t





APIARY AND WINTERING CELLAR OF T. F. BINGHAM, FARWELL, MICH.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL. XVI. FLINT, MICHIGAN, APRIL 10, 1903. NO. 4.

A WARM, DRY CELLAR WILL ALLOW PLENTY VENTILATION. BY T. F. BINGHAM.

Friend Hutchinson: I write because Mr. Barber, in the last Review, took such a decided stand against fresh air in winter repositories. I am unable to see how fresh air should be of such baneful influence.

But Mr. Barber has the advantage of me, because he has tried it twenty years; and, of course, believes it was the fresh air that killed his roaring bees. To a bee-keeper in Michigan it would appear to be the lack of fresh air that caused them to roar.

Of course, we young bee-keepers can not cite our long experience, but we can ask that such results be traced back, to see if some other cause or treatment is not the real cause, while the apparent deductions are only presumptions. I would ask if the large bee-keepers referred to were ever able to winter their bees in such cellars safely until they took up the plan of feeding granulated sugar syrup, about seven pounds to each colony, just before putting them into the cellars? It is of value to bee-keepers to know the truth, or facts.

The pre-eminent success of Mr. Barber's near neighbor, who wintered 150 colonies in a house-cellar, obtained 10,000 sections, together with 1,500 pounds of extracted, and 90 colonies increase, after losing nine by lightning, sounds well for the abundant fresh air that is always present in house-cellar. Either the young man, or the cellar, or both, made a fine record.

It will be well to keep one's eye on such a man. The escape from loss by lightning, and the bee-cellar of his neighbors, shows rare gifts which may be of great service to bee-keepers.

Bee-keepers long in the pursuit sometimes have suppositions which have grown rapidly and fixedly as the years passed on. A tradition is not necessarily advance truth. Not more likely than that the letting of fresh air into the cellars is a step backward.

BEES DO NOT ROAR, INDOORS OR OUT, IF
THE AIR IS PURE.

The object that I have in writing this article is to call attention to the fact that bees do not roar when in the open air at 50 degrees. Neither do

they in the cellar, if the air is as fresh and pure indoors as out. Mr. Barber's roaring bees, in all probability, roared too much.

Mr. Doolittle, who winters bees in his cellar on four pounds, by actual weight, would be much astonished to learn that a colony spent a whole winter roaring and tugging four pounds of food into the center of the cluster for daily use.

Well, circumstances alter cases. We are well pleased with our cellar experiments and believe (mind you, believe, not know) that in less than 20 years it will be demonstrated that the temperature of a bee-cellar (I mean a cement cellar not a house cellar) may go up and down, from frost to 50 degrees without injury to the bees if only the air is as pure and dry as it is out of doors. I have no cellars to sell, but I am aware that a cement bee-cellar, to be first-class, ought to be built just as soon as the snow goes off, and be sawdusted and dried all summer, so as to be absolutely seasoned before the bees are put into it.

It must be borne in mind that, at present, cement is the only cheap material that will furnish the warmth of the earth without the moisture of the soil or water surrounding it.

PECULIARITIES OF A CEMENT CELLAR

A dry room surrounded by the warm earth must be depended upon in order to allow the central upward ventilating flues. It is alone by them that dry, fresh air can at present be supplied in sufficient volume to meet the demands of the bees. My three flues are all wide open now; and the bees are not roaring because they have or have not a "sniff" of the spring air.

These three flues have a superficial area of 716 inches, equal to one flue about five feet wide by one foot thick, reaching up into the air sixteen feet.

Farwell, Mich., March 9, 1903.

PLENTY OF AIR NEEDED IN SECURING HEAT FROM HONEY CONSUMPTION. BY A. C. MILLER.

From many and extensive experiments conducted through many years I begin to believe that bees winter well in chaff hives in spite of the packing, not on account of it. There seem to be four "plenty's" on which successful wintering hinges, i. e., plenty of stores, plenty of tight sealing and plenty of entrance. There is a very real and very solid reason for this last condition and one so seldom alluded to that it may well be said to be utterly ignored, and that is an ample supply of oxygen.

FOUR REQUISITES TO SUCCESSFUL

WINTERING.

Given a box through which no drafts can pass (no upward or lateral ventilation), a plentiful supply of honey to burn, plenty of bees to burn it, plenty of oxygen to burn it with, and you have a formula which spells Success.

I am led to write of this now because of certain misleading remarks which recently have been going the rounds and because I have just finished another winter's experiments and have the results fresh before me.

THE NATURAL VENTILATION OF THE

HIVE.

One writer, an authority on many parts of apiculture, not long ago said: "If the change of air has to be accomplished by the entrance alone the bees must exert themselves to create a draft, and this is not good." Two factors he entirely overlooked, i. e., the normal movement of the warmed air in and about the cluster and the formation of heavy carbonic acid gas. Mr. Cheshire has very ably analyzed

the subject in the chapter on "Wintering" in Vol. 2 of his monumental work. It is so complete and so much better than I can state it myself that I will quote part of what he says:

THE CHEMISTRY OF HEAT PRODUCTION
IN A BEE HIVE.

"A supply of fresh air is from all this clearly essential, for as the heat is in proportion to the honey consumed, so it is in proportion to the products of oxidation—the noxious gas (carbonic acid) and the water, as a reference to the following table will show in which all but the main constituents of the honey have been disregarded for simplicity's sake:

24oz. honey	{	9 oz. water	=	9 oz. water.
		6 oz. carbon	=	6 oz. carbon.
		8 oz. oxygen	=	8 oz. oxygen.
		1 oz. hydrogen	=	9 oz. water.

The 6 oz. of carbon being united with 16 oz. of oxygen from the air, we obtain 22 oz. of carbonic acid gas, which, with the 18 oz. of water are thrown into the air of the hive by the consumption of 24 oz. of honey.

"Let us first trace the 22 oz. of carbonic acid gas occupying about twelve cubic feet at ordinary temperature. Dealing with a stock wintered on seven standard frames (approximately six L. Frames A. C. M.) set at 1½ in. from centre to centre we find:

7 frames, each 8½ cubic in., wood	=	59½ cu. in.
20lb. honey, specific gravity 1.386	=	400 "
1½lb. wax, specific gravity .965	=	43 "
Pollen estimated	=	20 "
Bees	=	100 "

622½

"Disregarding fractions, this subtracted from 1,500 inches, the solid contents of the hive, gives 878 inches, i. e., air space which we may for simplicity's sake regard as half a cubic foot or 864 cu. in. Therefore the twelve cu. ft. of carbonic acid produced from the consumption of 1½ lbs. of honey would fill the air space

of the hive 21 times. Nor is this all: air is only one-fifth (by measure) oxygen, the other four-fifths being nitrogen; and carbonic acid occupies precisely the same space as the oxygen which unites with the carbon to produce it. Therefore if the whole of the oxygen introduced, had been converted into carbonic acid the air in the hive must have been entirely renewed 24x5=120 times; and further, the presence of carbonic acid is so deleterious that 5 per cent only of the oxygen could be utilized, the proportion being also limited by the laws of gaseous diffusion (interchange) in the breathing tubes of the insect. Thus it is impossible to resist the conclusion that 1½ lbs. of honey cannot be oxidized for heat production without the air of the hive being changed 2,400 times."

Then he proceeds to give the ordinary consumption of a normal colony not raising brood as about 1½ oz. daily and deduces that the air of the hive even with this limited consumption must needs change completely every thirty minutes.

CHAFF HIVE ENTRANCES ARE TOO SMALL.

All chaff hives with which I am familiar have a very restricted entrance, not nearly sufficient for the free ventilation required by a strong colony, hence it is small wonder that such have to stir about and "fan" now and then. A porous covering would very slightly help in providing more air, but at a grievous expense in other ways. A tight sealing with wide entrance is much better.

A SINGLE-WALL HIVE NOT ENOUGH
PROTECTION.

Be the hive single-walled or chaff-packed, the bees when clustered do not fill it nor do they greatly increase the temperature of the contained air except of that immediately in contact

with the cluster. The warmed air in and immediately about the cluster rises, spreads out against the mat or cover, chills, settles and flows out the entrance as naturally as water. This natural current is accelerated by a part of the air being charged with carbonic acid gas, which is heavier than pure air of same temperature. A small entrance restricts this flow, but in a single-walled hive the current is quicker than in a chaff hive. However, the single-walled hive is not, in the average winters of this latitude, an economical one in which to keep the bees. It is too thin, affords too little protection against long continued cold, and, though it warms through quickly when the sun shines on it, it almost as quickly cools off afterwards. The chaff goes to the other extreme; it chills through slowly, but no one day's sunshine will warm its walls. With a wide entrance affording plenty of fresh air the bees in either of these extremes can better resist the adverse conditions.

CHEAP, EFFICIENT PROTECTION FOR A SINGLE-WALL HIVE.

I believe, however, that there is a middle ground where we can secure better results than with either type of hive above alluded to. It is with a single-walled hive covered with a wind and waterproof wrapping of black. I find that such a hive warms through rapidly when exposed to the sun and retains the heat thus acquired for a long time. For two winters I have had many colonies so protected and in every case they have done as well or better than colonies in chaff hives but in every instance they have had an entrance 15 inches wide.

Whether or not such protection will prove sufficient for colder climates remains to be seen. With any kind of a hive it is important that the bees

can without effort get all the oxygen needed, and it is equally important that the ventilation be downward, not upward.

Providence, R. I., March 25, 1903.



HOW TO PREVENT BOTH SWARMING AND INCREASE.

BY L. STACHELHAUSEN.

The production of comb honey in out-apiaries has some difficulties. The first question is, how to manage swarming? At present our best bee-keepers think a small brood-chamber (9 Gallup or 8 Langstroth frames) necessary for comb-honey production; and by the time the main honey-flow commences, this brood-nest must be full of brood, and kept so, as much as possible, during the honey-flow, thus forcing all the honey into the sections. Probably this is the best plan as yet known, but it has some disadvantages.

First, much handling of brood-frames is necessary in the spring (Doolittle), while with a large brood-nest we could get larger colonies without any handling of frames. Second, these small colonies will swarm sooner or later, thus making it necessary to hire a watchman for every out-apiary.

Therefore we need a plan, which prevents all natural swarming. Many bee-keepers have worked on this problem; but, as far as I know, with little success. If I am not mistaken, it was Doolittle who offered to pay a sum of money for a safe plan to prevent swarming; and he expects such a plan may be invented by somebody about 1925.

Some bee-keepers do the next best and swarm their colonies artificially,

if they have not swarmed at the right time. This has some advantages. Forced, shaken or brushed swarms (I do not care which name is given them) properly made, on the old stand, with a contracted brood-nest, and starters, are in the best possible condition for storing honey in sections; the same as a natural swarm; and we can make them at just the right time—the beginning of the main honey-flow.

Before making these artificial swarms, we can use large hives, which will prevent swarming before the honey-flow. In this way we can manage an out-apiary without much danger of losing any swarms. The forced swarms are worked for comb honey, and the parent colonies, from which we prevent after-swarms in one of the well-known ways, are worked for extracted honey; because the large brood-chambers are not fit for comb-honey production. This plan I knew and used during some years, and got fair crops of comb-honey, about 1889 till 1893. At that time I secured more comb-honey from a large, strong swarm than from any colony which did not cast a swarm.

The swarms are losing field bees every day during the first three weeks, at a time, too, when the main flow is the best. The brood is increasing, while no young bees are hatching, and this brood has to be nursed by bees which are able to do some field-work.

WHAT STARTS THE SWARMING FEVER.

I studied again to find out a way to prevent swarming. The first question is, what causes the bees to swarm? If we know the cause of a disease we will probably find a remedy. Well I know (yes, know) the cause of swarming now. But, as bee-keepers (and editors, too,) do not like theory, I will not explain it. It is enough to

say that the swarming fever is finally started when there are more bees in the hive than can be employed in nursing brood and comb-building. A sure way to prevent swarming is to remove this surplus of young bees, and keep them out of the hive till they are able to do field-work. But how we can do this?

HOW TO SO MANAGE THE YOUNG BEES AS TO PREVENT SWARMING.

In making a forced swarm on the old stand, we remove, in fact, a part of the young bees and all the brood. If the capped brood should remain in the colony, it would be changed to young bees in a few days and would start the swarming fever again. If we remove all of the brood and some of the young bees, and form a colony out of them, we employ the young bees in nursing the brood; and this colony can't swarm before it has raised a young queen. On the other side, the swarm has no brood, only a few young bees, which are engaged in building combs and will have no desire to swarm, and is in the best condition for storing honey in the sections. For the first part of our problem, the shaking process is satisfactory. It remains to give the bees, hatched from the brood, back to the swarm as soon as they are old enough to do field work. I solved this problem in the following way:

When we shake the bees from the combs to make the forced swarm, we cut out all queen-cells, if any such should be present. The brood-combs and enough adhering bees to protect and nurse the brood are set into a hive, and this hive is placed near the swarm, on top, or on the side, probably best with the front at a right angle to the front of the other hive. In 9 or 10 days this hive is removed a few steps, all the combs taken out

and the queen-cells cut out. The brood is now nearly all capped; the few bees old enough for field work will go to the swarm and as many young bees as this queenless colony can spare are brushed or shaken in front of the swarm, where they at once will run in. In the swarm we have a large patch of brood, and some young bees will be of great benefit without causing the swarming fever. If we have removed the hive in the morning, we can set it back to the old place in the evening, if we want to go home again. In the home-yard we can wait till the next day, thus inducing more of the young field-bees to unite with the swarm. This colony now has no queen-cells and no brood to start new ones; it is hopelessly queenless. For this reason I give a comb containing some young brood (a small patch of brood will do) so they can start new queen cells, but I do not think this is absolutely necessary. Ten days afterwards this brood-comb is removed, and, after cutting out the queen-cells is used somewhere else. The other brood is nearly all hatched out, and I shake and brush all the bees in front of the swarm, and remove the hive on the side of the swarm entirely.

As soon as the honey-flow is going to end, the brood-nest of the swarm is enlarged to its regular size. The best of the old, now empty, brood-comb can be used and exchanged with some drone-combs, if such should have been built by the swarm. Surplus combs, if not useful in any other way, can be rendered into wax afterwards.

Different modifications of this plan can be used, but it is not only possible, but practicable, too, by this plan, to run an out-apiary exclusively for comb-honey without danger of loss from natural swarming either before or during the main honey-flow. By this plan we keep the working force

of every colony together and prevent all increase.

Lately I have read many reports about forced swarms; the most of them favorable. Some prominent writers have mentioned, as a disadvantage, that by taking away all the brood we remove just so many future fieldworkers. This proves that my idea, which I published two years ago, was so much new to them, that they did not understand the main point, which is that I give back to the colony, so treated, all the young bees, which I have removed in the form of brood, as soon as they are of any value to the colony, and when they will not cause swarming any more.

I found this plan by theoretical speculation, and combined some well-known manipulation for this purpose. Practical tests proved that I was correct. We see theory is not quite as useless as some may think.

Converse, Texas, Nov. 27, 1902.

Bee-Keepers' Review

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W. Z. HUTCHINSON, Editor and Publisher

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Flint, Michigan, April 10, 1903

Patents on bee smokers in this country have all been issued to one man—T. F. Bingham, Farwell, Michigan.

Mr. Bennett writes me that his paper, the Pacific Bee Journal, will be started again this month.

One Hundred Colonies is the limit in number that can be profitably kept in an ordinary location, one year with another.

When extracting at a time that bees will rob, nothing will stir up a colony and set it to trying to rob, as will the giving of freshly extracted combs.

A Queen caged and placed on the bottom sash of the window will collect and hold all of the bees scattered about a bee or honey house.—Henry Alley.

Old Bees can not rear good queens, says Henry Alley. They will commence cell-cups, and complete queen-cells, but no strong queens will come from them.

Feeding must be resorted to in queen-rearing when there is no forage in the fields, and Mr. Alley says that experience has taught him that sugar syrup, with some honey, is as good as clear honey.

Your editorials headed: "A Man Can't Know Too Much About His Business," "Successful Commercial Bee-Keeping," and Mr. Townsend's article, strike me just right."—E. R. Jones, Beeville, Texas.

A Queen Breeder cannot do a successful business on a small scale. He must have hundreds of queen cells growing all of the time, and hundreds of laying queens on hand ready to use in filling orders.—Henry Alley.

The Queen Nursery is one of the most valuable implements that a queen breeder can have in his apiary. It

saves one-half the expense in money and bees. It is used for cell-holding, for keeping both virgin and fertile queens.—Henry Alley.

Out-Apiaries, how many colonies a man should have before starting one, how far away to locate it, how to manage it, and so on, and so forth, were enthusiastically discussed at the recent meeting of bee-keepers in Northern Michigan. It is 'one of the hopeful signs of the times.

Granulated honey may be removed from the combs by uncapping the honey, dipping the combs in water, and then allowing the bees access to them. Placing the combs, or sections, under a hive of bees is an excellent way of giving the bees an opportunity for removing the honey.

The Rearing of Queens above a queen excluder, with a laying queen below, is not advised by Mr. Alley, unless it is done at swarming-time. He says bees do not do the work with the same interest as when about to cast a swarm, or when absolutely queenless.

"The Review keeps boosting me higher and higher up the mountain side of apiculture. With each ascent I can see further across the plain of possibilities. The March issue very plainly pointed out a delightful locality, about 50 miles away, with a railroad station only 10 miles from here."—Extract from a private letter.

Breeding Queens are kept by Mr. Alley in small hives, each containing five combs about five inches square. To remove eggs from such a hive is much less trouble than opening a full colony, the mutilation of large combs

is avoided; and, if a new comb is added daily, there are always fresh eggs available, the exact age of which is known.

The Youths' Companion has just commenced a continued story, that will run eight weeks, in which will be set forth the experiences of two parties of boys, each party going north, up a river, in a rowboat, with a colony of bees, a la migratory bee-keeping, striving for a prize of \$25 offered by the Bee-Keepers' Association for the largest yield of honey from a single colony. The story is written by Arthur E. McFarlane, and starts out well.

A Lining of damp paper put inside a vessel into which melted wax is to be poured will prevent the wax from coming in contact with the vessel, hence there will be no dish to clean up afterwards. Strange as it may seem, the paper will also peel off readily from the cake of wax. Neither will the cake crack while cooling, as it is not stuck fast to the walls of the dish. Mr. H. R. Miller, of Fulton, Missouri, wrote me about this.

Cut deep when uncapping combs for extracting. This can be done more quickly than to try to cut off a thin slice. In lengthening out the cells the bees have an opportunity for using the wax they secrete. The honey will drain from the cappings, or may be secured by rendering the cappings in a solar extractor. There is one more point: The new addition that the bees make to the combs in lengthening out the cells makes the next uncapping very easy.

Bees should be queenless a few hours, long enough to realize their condition, before being given eggs for

queen-rearing, says Henry Alley, but we should not wait too long before giving eggs, as, after being queenless 36 hours, they seem to lose their interest and enthusiasm. It is not good policy to compel a given lot of bees to commence a second batch of cells—their interest and enthusiasm have vanished.

Tobacco Smoke, when used for introducing queens, puts the bees in such a condition that they cannot defend their stores, for this reason it should be used just at dusk, after the bees have quit flying; that is, if at a time when bees will rob. The effect of the smoke soon passes off; and Mr. Alley says that he thinks it impossible to injure bees by its use, if they can have fresh air soon after the smoke is used.

Virgin Queens can not be successfully introduced unless the bees have been queenless three days, says Mr. Alley. I think Mr. Alley must have reference to virgin queens that have attained some age, as I have introduced hundreds of just-hatched virgins by simply letting them loose on the combs at the time of removing the laying queen. Mr. Alley introduces his virgin queens just before dark, by giving the bees a good dose of tobacco smoke, and then letting the queen run in at the top of the hive.

Henry Alley does not use artificial queen cells. He takes a comb filled with eggs, and cuts it into strips by running a thin, hot knife through each alternate row of cells. Each alternate egg is then destroyed by inserting the "scratch" end of a match into the cell and giving it a twirl. The strips of comb are then fastened, with melted wax, to strips of wood, in such a position that the cells point downward,

thus affording the bees an excellent opportunity for constructing cells that may be easily removed.

Alfalfa, specially acclimated for cold climates, will be sent to all applicants by Mr. Wm. C. Aiken, of Angwin, California. He has a quantity of seed that was grown in the high altitudes of Nevada, a cold section where it is frequently 20 and 30 degrees below zero. For 25 cents, to pay for the cost of seed, and the postage, he will send enough to sow a plat from 50 to 100 feet square. Directions will be sent with the seed. I make mention of this as I think that the scattering of the alfalfa may result in good.

A Honey Knife will cut more smoothly if it is kept standing in a dish of water. If left out in the air the honey upon the knife dries down to a certain extent, something like so much paste, and makes the knife stick. If put into water, the water dissolves off the honey and leaves the knife clean and smooth. In the summer when the honey is fresh and thin, or direct from the hive, there may not be so much gained by keeping the knife in water, but when the honey is cold and stiff it makes a big difference. The water in which the knife is kept may be used in making vinegar.

MR. ALLEY'S NEW BOOK ON QUEEN REARING.

Henry Alley, of Wenham, Mass., is probably the oldest queen breeder in this country. He has not only seen many years, but much experience as a queen breeder. For several years he edited and published the American Apiculturist, at which time he wrote

and published The Bee-Keepers' Handy Book. He has now brought out a book of nearly 80 pages devoted entirely to describing improved queen rearing methods. The title is "Improved Queen Rearing." It gives in a nutshell the methods that the author has found best and most profitable.

It gives the requisites of a breeding queen, and tells where and how she ought to be kept. Tells how to secure the best of cells, the kind of bees that build them; how to form nuclei to the best advantage; to get rid of undesirable drones, and secure plenty of good ones; the use of tobacco smoke; how to care for cells and virgin queens; how to introduce queens; how to ship them; what to do with nuclei in the fall, etc. I don't know the price of the book, but I should guess it might be about 30 cts.

Take advantage of your advantages. For instance, I have a knowledge of photography, have a good camera, and my business takes me to bee conventions. By making a group picture, and selling copies to the members, I am taking advantage of my advantages. When I began publishing the Review I took advantage of a good common school education (with a little finishing off at the high school) a thorough knowledge of bee-keeping gained from both reading and practice, a smattering of the "art preservative" acquired from much "hanging around" a printing office, a wide acquaintance with bee-keepers gained by years of correspondence and dealings with them as a queen breeder, and by my contributions to the bee journals, and a genuine, deep-seated, intense love for literary work.

A man living in the South, possessing bees, a practical knowledge of queen rearing, and a reputation for

square dealing and the rearing of good queens is taking advantage of his advantages when he rears queens for sale.

A man possessing a thorough knowledge of bee-keeping and an apiary in a locality abounding in an abundance of honey producing plants, takes advantage of his advantages when he establishes out-apiaries.

A man is foolish to embark in a business for the conducting of which he possesses no advantages. On the other hand, he should study well his advantages, and make the most of them.

FOUL BROOD BEING ERADICATED IN ONTARIO.

Mr. McEvoy says that foul brood will soon be a thing of the past in Ontario. This is the result of years of faithful work on his part. I think Mr. France is getting the upper hand of it in Wisconsin. Michigan has been a little slow in getting started in this work of eradication, and the task before the inspector is almost herculean. It will require years of hard, earnest work before we say of Michigan what Mr. McEvoy says of Ontario. When talking last fall with Mr. Rankin, he said that if a line were drawn across the State from Bay City to Muskegon, nine-tenths of the foul brood would be found south of this; "and," he added, "nine-tenths of the honey is produced north of it." From what experience I have had, I think he is correct. The northern part of the State is practically free from the disease, but the southern part is fairly "seeded down" with it.

It is also true that the northern part of the State is far ahead of the southern part for honey production—the land is under too close cultivation in the older portions of the lower peninsula.

Tact, diplomacy, and a good judgment of human nature are the requisites for a successful inspector of apiaries. If he has a knowledge of foul brood, and how to treat it, well and good, but, unless he has plenty of tact, not much will he accomplish. Mr. McEvoy puts it in this form: It is much more difficult to manage the bee-keepers than it is foul brood. Ignorance is the greatest obstacle. Well informed bee-keeping specialists give the inspector little trouble. The farmer with a few colonies, who knows very little about bees, and cares less, is the man who puts the inspector on his metal. To be able to convince such a man that you are doing him and his neighbors a favor in turning up his bees, is certainly a fine art.

HOW THE REVIEW HELPED AND ENCOURAGED A BEE-KEEPER IN CUBA.

Three years ago Mr. Glen E. Moe left New York and went to Cuba, where he engaged in bee-keeping. In renewing his subscription, he said some very encouraging words for the Review, and I feel sure he will excuse me for allowing my readers to see them. Among other things he said:

"If it is not out of place, I would like to say that your editorials are, to me, the strongest feature of your journal. They have been of great value to me in various ways. Your advice to extend one's business in bees has been the one encouragement that I needed. It was my ambition to increase my business, but some cautioned me, fearing that I would over-reach. Your advice gave me the needed 'nerve' to push on, and I am happy to say that the venture has been a grand success. I now have 1,000 colonies, and shall increase to 1,300, or, possibly, 1,500, the coming season. Extracted honey is down to 27 cents

a gallon, in Spanish gold, so you can readily see that success lies only in producing it in large quantities.

I took up the bee business three years ago, without any knowledge of its details, methods or work, invested my last dollar in the business, with nothing else to depend upon, and when I note the results I feel that I have been successful."

ADVANTAGES OF A SWARM CATCHER.

Mr. McEvoy tells in Gleanings how he prevented a "snarl" in his apiary, when several swarms issued at once, by covering each hive with a quilt, as soon as a swarm was seen issuing from it. Not being able to escape, the bees returned to their hive; afterwards the colonies were divided. I have caught swarms in this way, by setting a tent over the hive, but a swarm catcher is away ahead of everything else in this line. If I were running a large apiary in which natural swarming was allowed, and an attendant always present in swarming-time, I should have half a dozen swarm catchers scattered about the yard. As soon as a swarm is seen issuing, when another is already in the air, it is the work of about five seconds to clap the catcher in front of the hive, when all trouble from that swarm is over. The swarm, when it has clustered in the catcher, may be set away in the shade, and hived at leisure. Mr. McEvoy's plan is infinitely better than to have a grand mix-up, but it necessitates an artificial division of the colonies that have swarmed, or else undergoing a repetition of the swarming the next day, while with the catchers it is only necessary to hive the swarms at your leisure, and the work is done. The advantages of the swarm catcher must certainly have been overlooked or mis-

understood, or it would have come into more general use.

BEES AND HONEY AT THE ST. LOUIS WORLD'S FAIR.

The following bulletin has been received in regard to bees and honey at the coming World's Fair:

"Group 96 of the official classification of the St. Louis World's Fair, covers the subject of bees, honey and accessories. The management is planning to so install the exhibit as to meet the views of the enthusiasts in this line. A north light will be secured which will abundantly light the exhibit of honey, and at the same time protect it from the rays of the sun. In juxtaposition will be arranged, under proper glass protection, colonies of the various races of bees, such as the Italian or Ligurian bee, the Egyptian bee, the common black or German bee and any other kinds may be hived and seen at work with access to the open fields, but closed to the building. Here the bee enthusiast may find all that pertains to his calling and compare results. It should prove of striking interest to the general visitor and will be made a feature in the Great Show.

Those who intend to make exhibits of bees, honey, wax, hives, etc., etc., should correspond early with Mr. Frederic W. Taylor, the Chief of the Departments of Agriculture and Horticulture, with the view of securing an allotment of space."

THE EDITORIAL OFFICE ON BOARD THE CARS.

On the train, going from one part of the State to another, looking after foul brood, is where nearly all of the editorial work of this issue of the Review was done; and where nearly all of the editorial work will probably be

done for the next few months. Perhaps I may have said before, I write as well on the train as anywhere. The monotonous noise acts as a curtain, shutting out all disturbances. In some localities there would be a strong temptation to look out of the windows, but I have been over the Michigan roads so often that the scenery has lost its novelty. I carry a note book in my pocket, and work in the spare moments, not only on the train, but when waiting for trains at junction points, nights and mornings at hotels, etc. For years I have been schooling myself in this direction, and now find little difficulty in isolating myself, almost completely, from my surroundings. I take the bee journals with me and read them on the train. Sometimes a bundle of letters are taken with me and answered during spare moments, as I can catch them. In short, the Review office, to a certain extent, goes with me wherever I go. It is only by adopting this method that I would be able to take care of the Review, and at the same time attend to my duties as inspector of apiaries.

THE ROCKY MOUNTAIN BEE JOURNAL SECURES MORE "HELP."

I supposed I knew how to chronicle the event when new help was added to the office force, but I will yield the palm to Bro. Morehouse, of the Rocky Mountain Bee Journal. In his last issue he has the following:

"The rapid expansion of our business has made necessary the employment of additional help. We have been looking for some one whom we hoped would prove a capable assistant for some months past, and on Sunday, March 15, he made his appearance. He arrived hatless, coatless, pantless, shirtless, bald-headed and—nameless. He is nameless, still, but is otherwise

pretty well provided for so far as his immediate necessities are concerned. We have engaged him to tarry under our roof for at least twenty-one years, and we shall hope to admit him to an equal partnership at the expiration of that time. As this is the first assistant to the firm of Ourselves & Wife, we feel considerably 'stuck up' over the matter, and any discrepancies in this issue of the Journal must be attributed to that cause. While our feet are still stumbling over the clods of mother earth, our head is (it feels like it is) floating somewhere away up in the etherial blue."

HIVING SWARMS IN A CONTRCATED BROOD-NEST.

A subscriber in the West writes me that he has trouble from swarms coming out and absconding when hived in a single section of the Heddon hive—it is too small. He thinks of making it about an inch deeper and using nine frames instead of eight. As I have been through those same troubles, let me tell my Western friend how I overcame them.

When bees swarm they are in an excited condition. They are hot and full of honey. Put your face down close to a swarm of bees that has been shaken down in front of a hive, and is running into it. You can feel the heat radiate, only in a less degree, as you would from a cook-stove. Take a crowd of people who had been exercising violently, running a foot race, playing football, or baseball, or tennis, and by crowding them into a small room, see how quickly they would rush out. It seems to take the bees two or three days to quiet down and cool off after going on a swarming spree. During this time they need abundant room. When I began using the Heddon hive, putting a swarm

into a single section, and putting on the sections, there was so much swarming-out that I came very nearly being discouraged. Finally I began using both sections of the hive for a brood-nest for the first three days. On the fourth day I set the upper section, and the supers, to one side (acrosswise of an empty hive), then set the lower section off the bottom-board, returned the upper section and supers to the old stand, and shook down in front of them the few bees that were clustering in the lower section. I used starters only in the frames, and, at the time of removing the section, the combs in the upper section were usually one-third or one-half completed. Some of the combs in the lower section were just nicely started, and I used this lower section as the upper section to the next hive in which I put a swarm.

This management did away entirely with the swarming out after hiving. It gave the bees plenty of room until they had cooled off and settled down to work, when it mattered little how much they were squeezed, there was no swarming.

THE SIMMINS' METHOD OF SHOOK-SWARMING.

While talking with Mr. A. D. D. Wood, of Lansing, Michigan, he called my attention to the Simmins' method of practicing shook-swarming. He said that it had been described within the last few months in some of the journals—he thought it was *Gleanings*. I do not seem to recall having seen this method mentioned in the journals, and I am writing away from home, but, as Mr. Wood described it, I can see that it offers possibilities and advantages, under some conditions, not available in ordinary shook-swarming.

In brief, the plan is that of thoroughly arousing the bees of two colonies, inducing them to fill themselves with honey, the same as in all shook-swarming, and then shake the bees of the two colonies into one hive; thus making a mammoth swarm, the same as when two natural swarms unite. When the honey-flow comes early, is of short duration, and comb honey is desired, this plan gives an immense force at exactly the right time. With ordinary shook-swarming it is necessary to wait until a colony is almost ready to swarm, or else the shook-swarm will not be large enough to work to the best advantage. By shaking the bees of two colonies together, a powerful swarm can be secured quite early in the season, before the swarming fever has developed, or queen cells been started.

One of the old queens can be given to the shook-swarm (there will be no danger to her, as the bees are alarmed and filled with honey), the other queen being left undisturbed. If increase is desired, a queen, or a ripe queen cell, may be given to the queenless colony. If no increase is desired, the two depleted colonies may be united by setting one hive over the other. Such a colony will be an excellent one, a little later, for extracted honey, and will probably need an upper story.

This plan allows of making shook-swarms early in the season, before swarming symptoms develop, secures an enormous force for the production of comb honey at exactly the right time, prevents natural swarming, and allows a man to make a little increase, one colony from two, or to prevent it.

As I think over the new methods that are coming up, the keeping of more bees, the establishment of out-apiaries, I can not resist the conclusion

that a new era in bee-keeping is about to be ushered in. Once more let me say: Keep abreast of the times, and grasp the opportunities.



DEATH OF MR. THOS. G. NEWMAN.

One by one the fathers in apiculture, at whose feet we younger men sat years ago, are passing away, leaving the burdens and responsibilities upon other shoulders. Within less than a year four veterans have dropped out of the ranks. First was the venerable Chas. Dadant, next the genial Dr. Mason, then J. H. Martin (Rambler) closed his eyes in sunny Cuba, and then, on March 10, at the age of 69, the veteran journalist, Mr. Thos. G. Newman, passed away at his home in San Francisco, California.

While Mr. Newman was not the founder of the American Bee Journal, he took hold of it at a time when its subscribers numbered only about 800, paying \$2,000 for the same, and pushing it onward and upward until it became a power in the land. For twenty years he was its editor and publisher, when it was sold to its present owner, Mr. Geo. W. York, Mr. Newman going to San Francisco, and engaging in the publication of the Philosophical Journal.

I shall always remember my first visit to Chicago when I was an honored guest at Mr. Newman's home, occupying the same room with dear old father Langstroth.

I always liked Mr. Newman. He always strove to be correct. I remember talking a matter over with Mr. Heddon. We both hoped that a certain phase of it was true, but feared it was not. Finally, I told him that Mr. Newman had said it was not. "If Newman said it was not so, you may rest assured that it isn't," was his reply. "I have almost always found

Newman correct." In after years I many times re-called this speech of Mr. Heddon's, and noted its correctness. Mr. Newman was nearly always correct.

While editor of the American Bee Journal Mr. Newman founded, nourished, and brought into full tide of prosperity, the National Bee-Keepers' Union, which did noble work in defending the rights of its members, and in establishing precedents in law that have greatly aided in preventing lawsuits. For many years Mr. Newman served, without recompense, as General Manager of the Union, accepting a salary only when the Union was abundantly able to pay him.

The last few years of Mr. Newman's life were more or less of a struggle. Poor health, and almost total blindness, were among his trials. In order to do business he had to employ a reader and stenographer, yet he struggled on with that indomitable spirit that always dies in the harness.



WHAT PART DOES VENTILATION PLAY IN THE WINTERING OF BEES?

It must be admitted that the part played by ventilation in the wintering of bees is not yet thoroughly understood. There is, apparently, a condition of facts and experiences. There have been many reports of successful wintering with very little ventilation. I have many times wintered bees successfully buried in a pit, with no more ventilation than could come through 18 inches of frozen earth. The bees consumed very little honey; in fact, it seemed almost as though the colonies had simply slept over night. The man who first urged me to try wintering bees in this manner, was Mr. C. J. Robinson, of Richford, N. Y. One of the arguments that he put forward in favor of this method,

was the lack of oxygen. He said the bees would "live slower," eat less, and enter more completely into a hibernating state than when given a generous supply of oxygen. This is simply theory, and each one can take it for what he thinks it worth. The facts are that I wintered bees successfully by this method, year after year, gradually increasing the number each year until I met with disaster when I put 96 colonies into one pit. What caused the loss I am not able to say positively. There was no disease or dysentery. The combs were bright and clean, and almost no honey consumed. The bees were simply absent—had left the hives and crawled all through the straw with which the hives were surrounded. Sixteen hives, each containing a queen and a handful of bees was all I had left alive in the spring. It is possible that so many colonies in one bunch generated so much heat as to drive the bees from the hives.

For two or three years I put bees in two pits, ventilating one and not the other, but could see no advantages in ventilation, so abandoned it. If the ventilation did no good, it certainly did no harm. The temperature in these pits is very uniform. In those that were ventilated, a thermometer was suspended by a cord down one of the ventilating tubes, so the thermometer hung by the side of the hives. All winter long the mercury never went above 43 degrees nor below 40 degrees. Zero weather, or 75 degrees outside temperature in May had little effect upon the inside of the pit.

All of my successes in wintering bees in pits were in a dry, sandy soil. I have had several failures in a clay soil.

Perhaps some will say that the air came through the sandy soil. Perhaps; but Prof. Cook years ago sealed up

two colonies by throwing water over them in winter, and allowing it to freeze, thus sealing them up hermetically, yet they wintered well.

Mr. Heddon tells of an old farmer who closed the entrances to his hives with blue clay, expecting the bees to die, and thus allow him to secure the honey. In two weeks he opened the entrances, when great was his disgust at the merry manner in which the bees enjoyed their freedom. This was in the fall of the year.

Many years ago General D. L. Adair pasted paper over the entrances to some boxes of honey containing bees just as they came from the hives, yet the bees bore the confinement, and lack of air, many days.

Years ago, many men went to the expense of admitting air to their bee cellars through long pipes laid under ground. Sub-earth ventilation was expected to do great things. Pipes were opened and closed to regulate the temperature. Gradually they were opened and closed less and less, and finally abandoned altogether. The bees wintered the same whether the pipes were open or closed.

An endless number of such instances as I have given might be mentioned. On the other hand, so good a scientist as Mr. Cheshire tells us how often the air in a hive must be changed if the bees consume only $\frac{1}{2}$ oz. of honey per day. There is a discrepancy here that is hard to explain.

The foregoing was written on the train, and I had just finished it when the train arrived in Lansing. I called upon my friend A. D. D. Wood. He intends to build a large cellar this year—large enough to hold 600 colonies. He had written to Capt. J. E. Hetherington asking for his advice regarding the necessary size. The Captain told him that his cellar for 1,000 colonies was 16x80 by eight feet high;

and a building was built over it. One third of the floor was loose so that it could be taken up for ventilation. The Captain very strongly urged putting a building over the cellar for the purpose of controlling ventilation and temperature.

Last year Mr. T. F. Bingham, of Farwell, Mich., described, in the Review, his cellar built like a cement cistern, and ventilated with a single flue 16 inches square. This ventilation was not sufficient towards spring. The bees "roared" and became uneasy as the temperature went up. He then put in two more flues, and this year the extra flues enabled him to not only secure a better control of the temperature, but to furnish such immense quantities of air, that there was no roaring. It seems that Captain Hetherington goes so far as to be able to take up one-third of the floor for the sake of ventilation.

I visited Mr. Bingham a few days after his bees had been set out, the latter part of March, and they had certainly wintered finely. The frontispiece this month shows his yard as it looked when I was there. As Mr. Bingham's hives consist of simply closed-end frames, with a board at each side, all held together with wire, keyed up tight, they are protected with an outer covering of canvas attached to the cover. When the hives were brought out the special bottom-boards, that give a two-inch space below the hives, were also brought out and left scattered about the yard that the rain and snow might wash them off before they were stored away. Mr. Bingham is an exceedingly neat man, and objected to my taking a picture of the yard with these things scattered about, but I told him that I should explain all about it. His wintering cellar may be seen in the background, the three flues projecting through the roof.

While it is true that bees have been successfully wintered under conditions that seem to indicate that ventilation has little or no influence, I must admit that, like Mr. Bingham, I am unable to conceive how plenty of pure air can ever have a baneful effect upon bees under any circumstances. Bees have certainly wintered very successfully with only a small quantity of air at their command; but the success may have come in spite of the lack of air. Ventilation is certainly sometimes needed to control temperature, if for nothing else.

In closing, let me call attention to one fact. Time and again have we heard some old bee-keeper tell how well bees wintered years ago. They were in box hives, with a pebble under each corner. How they wintered when so exposed he did not know, but they did. They had plenty of honey and oxygen to burn. That may have been one reason.

There are so many factors that go to the making of successful wintering in a cold climate, that it is not well to pin one's faith to one alone, and ignore the others.

EXTRACTED

VENTILATION IN BEE-CELLARS.

Some Evidence Going to Show that it is Beneficial.

The publication of Mr. Barber's views regarding the ventilation of bee cellars did exactly what I expected—stirred up the advocates of ventilation. Gleanings for March 15th contains the following:

"In the Bee-Keepers' Review for February appears an article from Ira Barber on this subject. Mr. Barber

has been an advocate of high temperature in bee-cellar, and has insisted that one of the chief requirements for successful wintering is to keep out supplies of fresh air from the outside. From that article I make several extracts which will speak for themselves:

'When I was in the habit of airing my bees in winter quarters, they did all of their roaring in the cellar; but when they got to their stands in the spring there was no roar left, for there would not be enough bees left to get up a good respectable roar. After I learned that bees would winter nicely with what air was in the cellar, and what naturally finds its way there, I found my bees did their roaring on the wing; and 75 or 80 per cent of them were ready for the sections when set out.

* * * * *

I should like to have Dr. Miller, and several others who are in the habit of airing their bees, agree to test this way of wintering, and see for themselves how strong and healthy their bees will come out. Don't be alarmed if they do roar, for they are always happy as a rule, when they roar the loudest.

* * * * *

I have wintered them so hot they could not stay in the hives, but would be all in a mass together, yet they came out the strongest lot I ever saw. No fresh air was allowed to reach them in that condition.

In case a man has only a few colonies they will winter fairly well in almost any cellar; and, of course, would not raise the temperature of the cellar so as to require any special attention; if it did not freeze, the bees would be all right.

It is where large numbers are kept together, that fresh air is so demoralizing to them.'

Then a little further on, referring to myself, he says:

'I hope that if E. R. Root comes up into this State next summer he will come on to this locality, where some of the largest bee-keepers of the State are to be found, and where all use large hives, and where all winter the bees in cellars as I have described.'

If circumstances had been so I could have gotten away, I certainly would have taken a run up to Mr. Barber's cellar, and incidentally stopped off to see Mr. Doolittle's. I will try to do so next winter.

Our own experience shows that the bees in a cellar without ventilation, especially where the temperature can not be controlled, is disastrous to the bees. They roar, fly out on the cellar bottom, and die in large numbers, and roaring with us seems to presage no good.

Last year we had something over 200 colonies in one of the compartments of our shop cellar. On the floor above there was heavy machinery in motion, with the occasional dropping of heavy castings, and yet the bees wintered well, and are now doing so again this winter.

In February, of last year, when it began to warm up outside, the temperature in the cellar began to rise. The bees became uneasy, flew out on the cellar bottom, and it was evident that the loss would be considerable. We picked out one warm day, and set a part of the bees out for a flight. After a good cleansing they were returned toward night. That lot of the bees became immediately quiet, but the other portion roared as before. These were set out on another day, and returned, when they also ceased their roaring. Previous to this when we found the bees would become uneasy we could quiet them down by giving them ventilation at night, closing the doors before morning. This had the effect of neither increasing nor de-

creasing the temperature; but it did purify the air.

This winter we put in only 40 colonies where formerly we had 200; and at this date, March 10, there are not enough dead bees on the floor to fill a two-quart pan; and those that are on the floor are as dry as though they had been dead for some time. We have not had to ventilate, for the simple reason that the compartment is large for the number of bees confined; and it may not be necessary to give them a winter flight.

Now, my own theory of the matter is this: That a lack of pure air causes the bees to become uneasy and hence active. They consume their stores, as a matter of course clogging the intestines. This makes them still more uneasy. When they are restless from this cause, nothing but a flight will quiet them; but when they are restless from want of pure air, a supply of it makes them immediately contented and quiet.

The accompanying letter, received from one of our correspondents, you will notice is along the same line:

I wish to add my testimony in regard to ventilating a bee cellar, and in taking bees out for a flight and returning them to the cellar, I use a part of my house-cellar partitioned off with matched boards. The temperature keeps between 38 and 41 degrees, with but little variation; air is rather damp, but I have a cement floor, and cellar is mouse-proof.

The winter of 1901 being the first I had tried, as I was afraid the cellar was too cold and damp, I put six colonies in for experiment. In March they were making more noise than earlier in the winter, causing me much anxiety; so when we had a warm day about the middle of the month, I set them out. They had a good fly, cleaned the hives of dead bees, etc.; were carried

back in the evening and, were very quiet till they were set out for good a month later.

From what I have read since, I do not think they had become so uneasy as to cause a veteran to worry; but I think it did them good, for afterward during the whole month they were very quiet—as quiet as when first put in, and all came out well in the spring.

This winter I have eleven colonies in the cellar; have taken more pains to ventilate, and up to the present time (Feb. 22) they are very quiet—more so than those were last year. I have 46 colonies out of doors, packed in planer-shavings.

CHAS. S. BLAKE.

Ashby, Mass., Feb. 22.

I do not presume to contradict so good an authority as Mr. Doolittle or Mr. Barber; but I firmly believe that, in the average cellar, and with the average bee-keeper, he will do better to ventilate occasionally, and perhaps set the bees out some warm day for a flight. A plan of procedure that will work well with experts like Mr. Doolittle or Mr. Barber might prove disastrous with the average bee-keeper. Mr. Doolittle has a cellar that will maintain the temperature absolutely within half a degree. This makes, no doubt, a modifying condition, rendering it unnecessary for him to give his bees any other ventilation than what would percolate through the cellar doors or walls. The absolutely uniform temperature keeps the bees quiet, or in a state of quiet and sleep, where the activity, and consumption of stores, are kept down to the lowest point. But now comes our friend Mr. Barber, insisting that temperature is not essential, and that they must have no fresh air.

Another winter, if my health and time will permit, I hope to see that

cellar, to determine, if possible, why his experience and ours should be so diametrically opposite to each other."

HANDLING BEES.

The Right and the Wrong Way of Opening a Hive.

The season for handling bees is again upon us, and it behooves us to get all possible comfort out of this operation, for, at best, it is somewhat beset with stings. Many of these are brought upon us by the manner in which the hive is opened. There is more in this operation than some of us dream. There is a right way and a wrong way, and Mr. Geo. Shiber tells about these two ways, especially the former, in the *American Bee-Keeper*. He says:

"A good many beginners don't learn how to open a hive properly. Many text books don't give the best of instructions on this point. I was bothered for some little while before I got on to the best way. Occasionally one sees directions given by a bee-editor. Such directions are all right for gentle Italians, but for blacks, do not usually work. When James Heddon published his book, *'Success in Bee Culture'*, I found in that a method for opening a hive of bees that will work.

Take the average colony of blacks or hybrids, have your smoker in good trim, blow smoke across the entrance, and, if no honey flow is on, into the entrance; then noiselessly pry up the cover and pour two or three good puffs of smoke into the top of hive, when you can handle your frames rapidly. But half smoking such a colony will make perfect terrors. With the gentler bees less smoke is needed, but the method should be the same. This can be done quickly, and one will soon get

so that before one has a chance to think twice the hive is opened and a frame out. In fact, a hive should be opened quickly. Smoking the entrance starts the panic, and the smoke on top of the frames completes it, and also gains the complete surrender of the crossiest hybrids.

I have had experience only with the blacks, Italians, Carniolans, and their crosses. Always perform the act of smoking the entrance, under cover, and opening the hive quickly—very fast; don't wait for the bees to fill with honey; let them fill afterwards, while you are manipulating, or not at all. Operating in this way you will not have a lot of cross bees to bother your neighbors.

At times, when at work opening a number of hives, one will accumulate a 'guard of honor' in the shape of a dozen or so of cross bees, whose ire has been aroused by some accident. Now don't leave the apiary and leave this guard to keep this thing up as long as they live, for they will. But pick up a fence separator and 'knock the stuffing out of them,' then you will have a yard of peaceable bees. A 'fence' makes a dandy weapon to kill bees. Try it."

FORCED OR "SHOOK" SWARMS.

They may not Work with Quite the Vigor of Natural Swarms, but They are a Necessity in Out-Apiaries.

One of the wonderful things brought out in the "shook-swarm" discussion is the fact that it has been practiced so universally, and yet its advantages did not receive the publicity that their merits would seem to warrant. Such veterans as Captain Hetherington and P. H. Elwood, of New York, have been practicing fore-

ed swarming for years, and the latter tells about it in Gleanings, using the following language:

"SHOOK-SWARMING" PRACTICED BEFORE
THE INTRODUCTION OF MOVABLE
COMBS.

"Before the introduction of the movable-comb hive Capt. Hethington forced all of his swarms by driving them out into an empty hive, and I very much doubt if this method of making forced swarms has been improved upon since. The driving process caused them to gorge themselves with honey, which seems to be quite necessary for wax secretion. It also caused them to adhere to a new location quite well when that was desired.

SOME IMPORTANT DETAILS OF
MANAGEMENT.

Ever since we first kept bees, thirty years ago, we have practiced forced swarming more or less. With our out-yards we have been compelled to take the matter in our own hands; and we find that, the nearer we can keep to nature's methods, and at the same time accomplish our purposes, the better. Instead of driving, we find with movable combs that it is more convenient to shake, taking some pains to have the bees fill themselves with honey, and also to leave always enough bees with the brood to protect it. If making is deferred until they are about ready to swarm they often do swarm out after being made; but unless several are out together they usually return all right, and work with increased vigor for having had their spin in the air. If shaken into a large brood-nest they are less apt to fly out; and if the surplus receptacles are left off for a few days there will be no trouble from pollen being stored in sections. At

the time of returning sections the size of the brood-nest may be adjusted to the size of the swarm. If not convenient to leave off the supers a sheet of comb will catch the bee-bread. Foundation or starters may be used at the option of the bee-keeper—more expense with foundation, more work with starters; for, with the best management, there will be quite a little drone comb to cut out and replace with worker. When a comb is used to catch the pollen we usually use foundation with it.

A SECOND SHAKING NOT ALWAYS
ADVISABLE.

Some bee-keepers, after a week or ten days, increase the strength of the swarm by giving the combs a second shaking. While this has its advantages it also has its disadvantages; for so large an addition of strange bees or of bees expecting a young queen, often produces trouble, causing swarming or supersedure of the queen. It is also liable, unless great care is taken, to leave the young swarm too weak.

ADVANTAGES OF DEQUEENING.

You ask if Capt. Hetherington and myself still practice dequeening. We do. By this method there is much less work, less mixing up by having swarms come out together; more honey; better-filled sections, and the colonies usually in better condition for winter. This method may seem to be entirely contrary to nature's methods, but it is not. When a prime swarm issues, and the queen is lost from lack of vigor, as often happens, and the swarm returns, the colony is in the same condition that one of our dequeened swarms is. We, however, carry the matter a step further, and do not allow them to swarm again, but return the queen or another at about the same time they would nat-

usually have a fertile queen of their own.

By the way, the making of forced swarms with queens that are failing, as mentioned above, is one of the most frequent causes of failure. With such queens they will sometimes swarm out at once, uniting with another swarm, or scattering to other hives, acting about like a queenless swarm. At other times nothing may be seen amiss but excessive drone-comb building and lack of vigorous work, followed usually by supercedure of the queen.

While there is no method of making a forced swarm that will cause it to work with quite the vigor of a natural one, still to those who have out-yards it becomes necessary to assume control of swarming."

CONSTITUTIONAL CHANGES.

Shall the National Association have Definiteness in its Constitution, or Depend Upon the Common Sense of its Directors.

In Gleanings for March 15th, in Dr. Miller's Stray Straws, we find the following:

"Editor Hutchinson thinks there ought to be some changes made in the N. B. K. A. constitution, and says: 'In fact, one great source, if not the source, of most of our late troubles has been from a lack of definiteness in our constitution.' Perhaps, Undoubtedly there ought to be some change, but the question is whether it is best to try to make it so definite as to meet every possible emergency that may arise, or to rip out some of its present definiteness and depend a little upon common sense. [I have for some time back held that we have too much constitution. It is impossible to prescribe a set of limitations in

advance that will cover all conditions and circumstances that may arise in the future. I would be in favor of having less constitution, with broader powers delegated to a Board of Directors, of men selected for their fitness and wisdom, and who shall not be elected year after year, simply because the membership does not know who else to vote for. I would further favor having a nominating committee composed of three men who are familiar with the capabilities of the best men in the Association. That committee should propose a set of names, and let the membership select from that set. A Board of Directors composed of wise men having broad powers delegated to them could proceed along the lines of common sense and expediency rather than have to run up against an unconstitutional limitation. But the time to talk about this matter is not now, but some three or four months before the next election. I will endeavor to open the question if nobody else does at that time. In the meantime, let us make the best of circumstances, and get down to business.—Ed.]"

It has been a long time since I have had an opportunity to have an argument with such fair opponents as these two brothers, and I intend to make the most of it. Even though I shall disagree with them, I shall do it just as good naturedly as I should agree.

The experience of centuries, I might say, has demonstrated that all organized bodies of men must have some sort of a constitution, or set of by-laws, by which to govern their conduct. Without this such organizations would be little more than mobs. Even in so thoroughly organized and officered an institution as the army, there are needed "Articles of War," "Manual of Arms," etc. It is not possible, nor desirable, to have a rule for every

emergency that may arise, it is not advisable to hedge the officers around with so many rules that they will be hampered in their work, but we can not think of such a thing as throwing rules to the wind, and depending upon "common sense," or anything approaching that, when one man's common sense is so different from that of his neighbor's. Emergencies arise. One director says do this way. Another says no, do the other way. The third has a different plan. This brings about a whole lot of argument and delay. When experience has shown that some certain way is best, let's embody it in the constitution, then when the point comes up again, we can simply say: "The constitution says so and so." That settles it. The majority of the directors, for the past year or more, are probably gifted with as much common sense as any that we will ever secure, yet look at the muss that they got into. I say again, as I have already said, that definiteness on the part of the constitution would have saved all of this trouble. For instance, suppose that the constitution had said definitely that resignations of officers must be sent to certain other offices, and accepted, before successors could be elected. Suppose, still further, that it had said that the directors should have power to fill the office of general manager, let the office become vacant from any cause, not simply when it is made vacant by the removal of that officer for cause. Had the constitution covered these two points definitely, our attempted election of a successor to Mr. Secor, last year, would not have resulted in the fizzle and fuss that it did. Now that we have seen, to our sorrow, what may result from leaving it to "common sense" instead of having definite rules, why oppose definiteness?

Then again, take the matter of

nominations. On this point the constitution is silent. Last year some one used his "common sense" and sent a nomination to the proper officer, and look at the muss it kicked up. If we had had some rule on this subject all this would have been avoided. I doubt if there is a member of the Association who does not favor some plan for making nominations. Bro. Root favors a nominating committee of three. Perhaps this is not exactly the place to discuss how nominations should be made, but I might say that I would rather favor the plan that I outlined last month, that of asking through the bee journals, to have the whole membership take an informal ballot, the two members receiving the highest number of votes to be the candidates. I will admit that a committee of three might be chosen who would be better acquainted with the merits of available candidates, than would the membership at large. On the other hand, we must avoid putting too much power into the hands of a few men. The membership at large should be the ruling power. The closer we can get the membership connected with the actual management the better. Nothing would be more detrimental to the organization than to have spring up a feeling that it was managed by a "ring." A nominating committee of three would almost amount to putting the election into their hands. I once proposed having the candidates nominated at the annual election, and it was opposed on the ground that it was putting too much power into the hands of the annual convention. Putting it into the hands of three men would be still worse in that direction.

Bro. Root says that the time to talk about these things is not now, but three or four months before next election. Beg pardon Bro. Root, but any

changes must be submitted at the annual convention, which is probably not more than four months distant, and it is none too soon now to begin the consideration of the matter. Unless we do something now in the way of considering the question, some one will bring it up at the coming convention, and secure the appointment of a committee, and, as I have already explained, men may be chosen who have had little or no experience in these matters, and have given them little thought, and the air at a convention is too full of hurrah to allow of a calm consideration of such important points. Besides, we ought to be able to discuss them publicly, just as we are doing now, and get the benefit of the cross-fire that will surely be drawn out. If we formulate a set of amendments that are finally approved by a majority of the board and the executive committee, these amendments will most surely be approved by the convention.

I agree most fully with Bro. Root's closing sentence, that in the meantime we make the best of circumstances and get down to business. The board and the general manager, and everybody, can keep right on at work now, and do the very best they can, but that will not prevent nor hinder the discussion of needed changes, nor will the discussion hinder any actual work that may be on hand.

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Via Chicago, Milwaukee & St Paul and Union Pacific line. Three thro' trains

daily to the Northwest via this route, or via St Paul. Information on request.

Robt. C. Jones, Michigan Passenger Agent, 32 Campus Martius, Detroit, Mich.

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Eustis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

Good Queens at Low Prices.

If it is queens you want, why, send direct to the NEW CENTURY QUEEN REARING CO., and get a queen any day, of any race, fresh from the moulds. Untested, of any race, 50c each; 3- and 5-banded Italians, tested, 75c each, all other races, \$1.00. We have an entire new system by which we rear queens, which explains why we can offer them at such low prices. Send for circular.

NEW CENTURY QUEEN REARING CO.,

2-03-tf

Berclair, Texas.

Standard Italian Queens

Of the Very Highest Grade.

Bred in separate yards from superior stock of Golden and Leather colored strains selected from among the best stock of long tongue clover queens in America, bred by us with the greatest care for business. No disease of and kind among our bees. Our high elevated country with its pure mountain air and sparkling water, and temperate climate, furnishes the ideal place of health for bees and man. See our circular for a fuller description.

Queens sent out last season arrived in the very best shape, except a few were chilled in cold weather. Our queens have gone to California, Canada, Cuba, New Mexico and many of the States. We rear all queens sent out by us from the egg or just hatched larvae in full colonies. Our method is up to date. If you want to know what we have or what we can do in the way of fine large queens; just give us a trial order. Shipping season from April 1 to Nov. 1.

Untested queens \$1.00, six for \$5.00, \$9.00 per dozen. Tested queens, \$2.00; select tested, \$3.00; best \$5.00. Full colonies, in light shipping case, tested queen, \$6.00. Three-frame nucleus, wired Hoffman frame, no queen, \$2.00; two frame nucleus, \$1.50. Add price of queen wanted to the above. Special rates on queens from 50 to 500. Write for circular please, it is free. 4-03-tf

T. S. HALL, - - - Jasper, Ga.

A Snap

IN BEE SUPPLIES

I have the following articles in bee supplies which, owing to other business requiring my attention, I will close out at less than cost. Thirty of Root's 1½ story, 8-frame, Dovetail hives with shallow extracting frames in supers, and with Hoffman brood frames, at \$1.35 each; 300 made up Hoffman brood frames at \$2.15 per 100; 400 shallow (5½ deep) extracting frames at \$1.50 per 100; one Daisy Foundation Fastener, without lamp, 65 cents; ten Bee entrance guards at 10c; ten 8-frame zinc honey-boards at 10c each; two Cogshall bee brushes 10c each; five mosquito-bar bee-veils, the lot for \$1.00; 50 Doolittle cell protectors, the lot for 50c; 200 2ct size Benton queen cages (with candy) for \$3.00; 50 nice, clean all-worker brood-combs, in Hoffman frames for \$5.00; 12 copies Hutchinson's late edition of *Advantage Bee Culture*, the lot at 40c each. Order at once if you want these goods. Can ship at once. Bees, queens, and nuclei for sale.

ARTHUR T. DEWITT,

2-03-tf

Sang Run, Md.

Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-26, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. The have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902.

Mr. Atchley, Sir:—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 140 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm, each stored 25 pounds of honey; so you see I have 11 colonies from one, and 50 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen or heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 50 pounds of honey. If any of you scientific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I want no better. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3 and 5-banded Italians, Cyrians, Albino, Holylands and Carniolans, bred in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$9.00 per doz. All other months, 75c each, \$4.25 for six, or \$8.00 per doz. Tested queens of either race, from \$1.50 to \$3.00 each. Breeders from \$3.50 to \$10.00 each. 1-2 and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY

P. O. Box 79, Beeville, Bee Co., Texas.

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

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GREEN RAPE costs
25 cents!
per TON.

Greatest, Cheapest Food on Earth for Sheep, Swine, Cattle, etc.

Will be worth \$1.00 to you to read what Salzer's catalog has to say about rape.

Billions Dollar Grass
will positively make you rich; 12 tons of hay and lots of pasture per acre, so also Bromus, Pearl, Suet, Mearns' Wheat for milk, hot 80¢, 13 lbs. per acre, 2 1/2 bushels of oats, 2 1/2 bush. per acre and Two-hats, Yields 100 tons Green Fodder per acre.

For this Notice and 10c.
We mail big catalog and 10 Farm Seed Novelties, fully worth \$10 to get a start.

JOHN A. SALZER SEED CO., LA CROSSE, WIS.

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co. Sheboygan, Wis.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross.
Shipped from New York or from factory.

Send for catalogue to

J. H. M. COOK, 62 Cortland St., N. Y. City

Please mention the Review.

Victor's Superior Italians.

Owing to extremely unfavorable weather for queen rearing, and the increasing demand for my superior strain of bees, I will have to place the price at single queen rate until further notice.

W. O. VICTOR

Queen Specialist,

Wharton, Texas.

SAY, ALL BEE KEEPERS,

ONE QUESTION, PLEASE.

If you were offered a hive that would save you one-half of your time and labor in its manipulations, one that would save you more than \$1.00 per hive in the cost of extras; or a double-wall hive for the price of a single-wall hive, would you not investigate its claims or merits?

The 20th Century Ideal Does All the Above.

Then why not be on time, and send for circulars today? See the Review for February, page 48 (excuse errors on that page) and 60. Book and hive are two of the grandest "hits" of the age. Order the book *now*. Price 25 cents, and your money back if you are not satisfied.

T. K. MASSIE

2-03-41

Tophet, W. Va.

We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest

Send for Catalog



Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

MICHIGAN

We are Jobbers of Bee-keepers' supplies in this State, representing

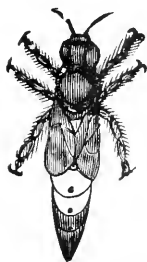
The G. B. Lewis Co., and Dadant & Son,

—WHOLESALE AND RETAIL—

Several carload on hand.
Send for 40-page catalog.

Lewis C. and A. G. Woodman, Grand Rapids, Michigan.

Tennessee Queens



Daughters of Select Imported Italians. Select long-tongued (Moore's), and select, Straight 5-band Queens, bred $3\frac{1}{2}$ miles apart, and mated to select drones. No bees owned within $2\frac{1}{2}$ miles; none impure within 3, and but few within 5 miles. No disease. 30 years' experience. Warranted queens 75c each; tested, \$1.50 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

WANTED.

An experienced bee keeper, to establish and take charge of commercial apiary on a plantation in Mexico. When writing, state terms of employment desired, and send references.

W. H. VERITY,
303 Fullerton Bldg., St. Louis, Mo.

The Largest Yield.

I have had 30 years' experience as a queen breeder, and bees from my red clover, Italian queens have gathered the largest amount of honey ever gathered in one season by a single colony. Queen mothers a specialty. I also breed fine Rose Comb Buff Leghorn Fowls (original). Circular free.

F. BOOMHOWER,

4-03-11

Gallupville, N. Y.

\$QUEENS - \$BEES - NOW.

A. L. SWINSON, Queen Breeder, furnishes best to be had in U. S. First-handed warranted queens, \$1.00. Tested \$1.50. Breeders, \$5.10 to \$10. American Albino Italians, and Adels mated to Albinos.

SWINSON & BOARDMAN,
Box 358, Macon, Ga.

PAGE & LYON, MANUFACTURERS OF AND DEALERS IN APIARIAN SUPPLIES, NEW LONDON, WIS. WRITE FOR OUR FREE, NEW, ILLUSTRATED CATALOG & PRICE LIST.

Bee-Keepers

It is a conceded fact that the bulk of the honey of the future is going to be produced in the irrigated portion of what is known as "Arid America." If you are interested in the progress of apiculture in this vast region, you should subscribe for the

Rocky Mountain

Bee Journal,

a twenty-page monthly; price 50 cents per year.

This is now the only bee publication west of the Missouri river. We have several hundred eastern subscribers, and have still room for more. Write for free sample copy. Address

H. G. Morehouse

Boulder, Colo.

ROOT'S GOODS

At Root's Prices

Pouder's

Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

WALTER S. POWDER

512 Mass. Ave.

INDIANAPOLIS IND.

STANDARD BRED QUEENS

Buckeye Strain Red Clover Queens, make their mark as honey gatherers; they roll in honey while the ordinary starve. Be convinced of their wonderful merit by a trial.

Muth's Strain Golden Italians are wonders; they are the best in the land.

Carniolans, no one has better.

We never figure the cost, when we purchase breeders. Our aim is quality and our patrons get the result. Large reserve for early orders. Ready to mail when weather permits; safe arrival guaranteed.

Untested, \$1.00 each, six for \$5.00

Select untested 1.25 each, six for 6.00

Tested 2.00 each, six for 10.00

Select tested 3.00 each, six for 15.00

Best money can buy, \$5.00 each.

Send for catalog of bee supplies, and see special inducements.

The Fred W. Muth Co.

Front and Walnut

CINCINNATI, OHIO

Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, be cause it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation for cash

a specialty. BEESWAX ALWAYS WANTED at highest prices. Catalog giving

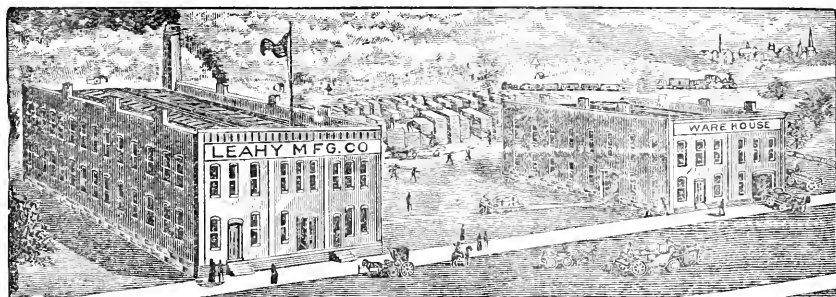
Full Line of Supplies

with prices and samples, free upon application. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price: only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,
JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N H., carries a full line of our goods at catalog prices. Order of him and save freight.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*. Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,
SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

Do You See This?

Have you ever solved the problem "what is the *best* all-round household remedy?"

I have carefully studied this problem during 18 years of general practice and think I have solved it. I believe, and my customers do, that there really is no other remedy so generally useful, or that gives such uniform satisfaction as

YELLOWZONES

Beats all how my customers *stay by me* year after year; many most prominent bee men, including Pres., Sec., Gen. Mgr. and Treas. of N. B. K. A. and many members, are among my regular customers—have been for years, and *you know they wouldn't be if Yellowzones* were not "Select Tested." I shall be glad to serve you also.

If you keep but one Remedy in the house it should be **YELLOWZONES.**

\$1.00 per box; Trial size 25 cents

Sample on request.

Your money back and **Another Box** if not satisfied.

W. B. House, De Tour, Mich.

WANTED.

An experienced bee keeper, to establish and take charge of commercial apiary on a plantation in Mexico. When writing, state terms of employment desired, and send references.

W. H. VERITY,

303 Fullerton Bldg., St. Louis, Mo.

\$QUEENS - \$BEES - NOW.

A. L. SWINSON, Queen Breeder, furnishes best to be had in U. S. **First-handed** warranted queens, \$1.00. Tested \$1.50. Breeders, \$5 to \$10. **American Albino Italians**, and **Adels** mated to **Albinos**.

SWINSON & BOARDMAN,

Box 358, Macon, Ga.

Please mention the Review

THE

A. I. ROOT CO.,

10 VINE ST., PHILADELPHIA, PA

BEE-SUPPLIES.

Direct steamboat and railroad lines to all points. We want to save you freight.

Please mention the Review

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Back Numbers

Of the Review needed to complete our file are as follows: Jan. 1889; Jan. 1890; March, August 1891; Feb. 1893; Sept., Nov. 1898; May, Sept. 1899; Feb., Nov., Dec. 1900. Any one having any of these issues that they are willing to dispose of will please address **WILMON NEWELL,** College Station, Tex. 2-03-61

Please mention the Review.

Superior Stock.



If the advertising that I have been doing the past three years has not convinced you that the Superior Stock that I have been offering for sale is really superior, then it is the fault of the advertising, for the stock is really all that I claim for it. I have guaranteed safe arrival, safe introduction, purity of mating, and satisfaction to the extent that a queen may be returned inside of two years, and the money will be refunded, together with 50 cts. to pay for the trouble. No other breeder makes any such guarantee. I have sold hundreds of queens under it. I do not know of a single dissatisfied customer, while I have dozens of letters from men telling of increased results from the introduction of this stock, and asking: "Can I get any more queens of you like the one I bought two years ago?"

Although the price of these queens is \$1.50 each, I have never been able to keep up with the orders. Most of my customers wait until spring before sending in their orders, and then have to wait from four to eight weeks. A few are far-sighted enough to send in their orders in the fall or winter, and these get their queens in May or June, in time to be of some service to them the same year. Send \$1.50 now and I'll book your order, and you will get your queen early in the season.

The price of a queen alone is \$1.50, but I sell one queen and the Review one year for only \$2.00. When you send in your renewal to the Review, send another \$1.00 (\$2.00 in all) and your subscription will be put ahead one year and your order booked for a queen.

W. Z. Hutchinson, Flint, Mich.

Queens

Golden and Leather colored Italian, warranted to give satisfaction. Those are the kind reared by **QUIRIN THE QUEEN BREEDER**. Our business was established in 1888. Our stock originated from the best and highest priced long tongued, red clover breeders in the U. S. We rear as many and perhaps more queens than any other breeder in the North. Price of queens before July 1st, Large select, \$1.00, six for \$5.00; tested stock, \$1.00, six for \$8.00; select tested, \$2.00 each; Breeders, \$4.00. Two-frame nuclei, (no queen), \$2.50. Special low price on queens in lots of 25 to 100. All queens are mailed promptly, as we keep from 300 to 500 on hand ready to mail. We guarantee safe delivery to any State, Continental Island, or European Country. Our circular will interest you. It is free. Address all orders to

QUIRIN THE QUEEN BREEDER,
5-03-6t Parkertown, Ohio.

HEDDON CASES.

I have over 100 of the Heddon, old-style section cases, that are well-made and painted, have been well cared for, and are practically as good as new that I offer at 15 cts. each

W. Z. HUTCHINSON, Flint, Mich.

—If you are going to—

BUY A BUZZ-SAW,

write to the editor of the REVIEW. I have a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Please mention the Review.

Make Your Own Hives.

Bee-Keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

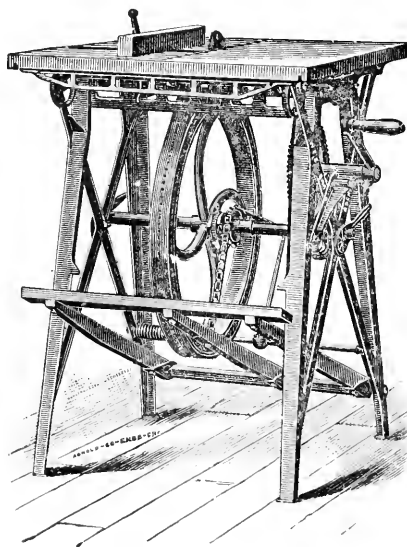
Machines on trial.
Send for Catalogue.

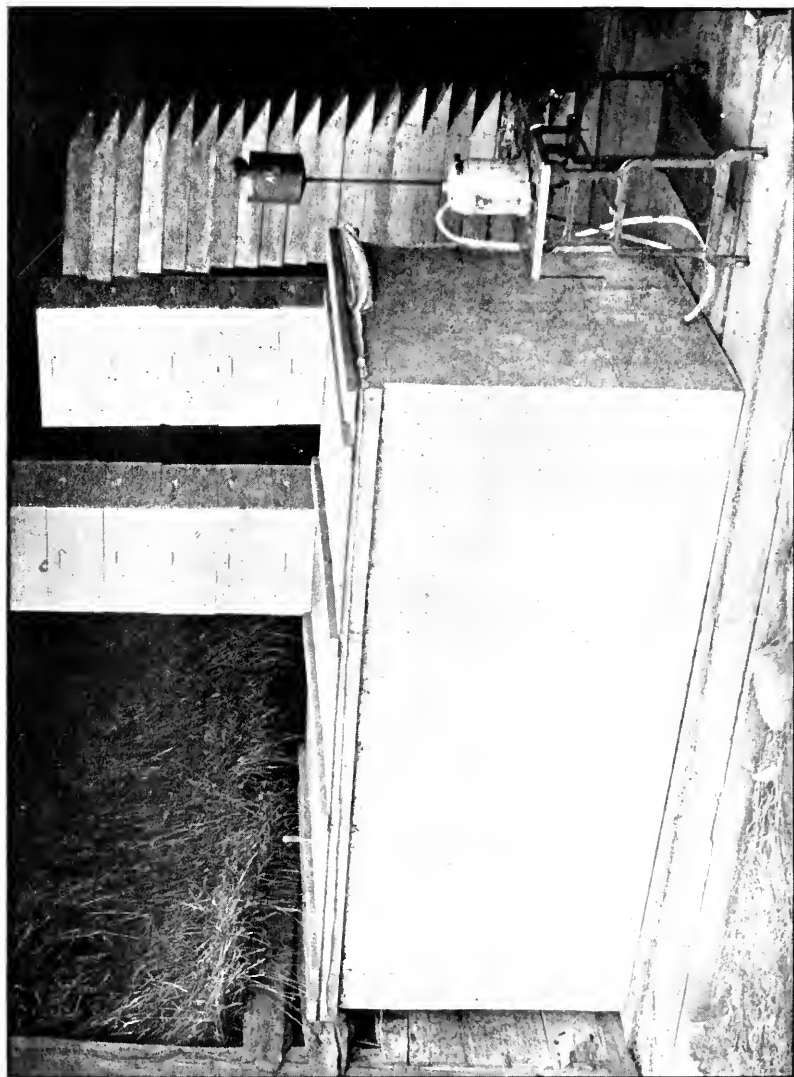
W. F. & JNO. BARNES CO.,

384 Ruby St.,

Rockford, Ills.

7-02-24t





C. A. HUFF'S TANK FOR FUMIGATING FOUL BROODY COMBS.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor

VOL. XVI. FLINT, MICHIGAN, MAY 10, 1903. NO. 5.

D ESTROYING FOUL BROOD GERMS WITH FORMALIN GAS. BY C. A. HUFF.

In January, 1902, the American Bee Journal published, in a convention report, a description of a method employed by Professor F. C. Harrison, of the Ontario Agricultural College, in destroying the germs of foul brood by fumigating the combs with formalin gas. (See Extracted Department—Ed.) Upon reading this, and having some correspondence with Professor Harrison, I decided to give the matter a test in a small way. I rigged up a large tin can something as follows: The can was about 17 inches in diameter, and 27 inches deep, and I made a cover by pasting together several thicknesses of heavy paper, and tying it over the top of the can while the paper was still damp. There was a little wax adhering to the top of the can, and, by means of a hot iron run over the paper, I melted the wax and pressed the paper down over it. Before putting on the cover I put in a comb containing scales of foul brood, and when the cover was dry I proceeded to turn in the gas. For generating the gas, I used an ordinary gallon oil can

made of galvanized iron. In order that I might at all times know how full the can was of the formalin, or formaldehyde, I rigged up a glass gauge at the side the same as is used on steam boilers to show how much water the boiler contains. At the hardware I purchased such a glass tube, and cut it in two, using only one half of it, as it was too long if the whole tube was used. Near the bottom of the can I punctured a hole and soldered on a tube of galvanized iron. On the top of the tube I soldered on a little rim of galvanized iron perhaps $\frac{1}{2}$ inch larger than the diameter of the glass tube. Near the top of the can I made another puncture and put in a tube with a rim soldered on, but, in this case, the rim was turned down. One end of the glass tube was inserted into the lower rim and the other end into the upper rim, and moistened plaster of Paris put in around the ends of the tube. As soon as the plaster had set, there was a water-tight joint all around. When the formaldehyde is poured into the can this glass tube will allow you to see how much you have poured in, and will also show when it has nearly all become vaporized. A leather washer screwed

down under the cap on top will prevent the escape of gas from that point. Next I got a rubber hose that would nicely slip on over the spout of the can, and connected that with a hole in the paper cover of the can. As the gas is heavier than air it settles to the bottom of the can, and forces the air to rise. For this reason I made a hole in the cover, and when I could detect the odor of the formalin gas I pasted a piece of paper over the opening. To generate the gas, the can of formalin can be set upon a gasoline stove, or over a lamp, or any way in which to heat the formalin and vaporize it. As soon as I discovered the odor of the gas coming out of the can, I stopped up the opening, as I have mentioned, and turned out the light. In an hour or so, I lit the stove again, and burned it until I could smell the gas escaping.

When I used the comb, only a few cells of foul brood developed. Right here I must explain that the formaldehyde was obtained of a local druggist who told me that he bought a 100 per cent solution and then reduced it to a 40 per cent solution, and that that was what he had sold me. Later I went to W. M. Kirchmaier & Co., of Toledo, O., and they told me that a 40 per cent solution was the strongest that could be made. In other words, the liquid will absorb only 40 per cent of the formalin. This local druggist had been buying a 40 per cent solution and then reducing it more than one-half, hence I had been using a very weak solution. I may say, however, that I was eventually successful in destroying foul brood with this weak solution by filling up the can with gas, as above described, then setting the oil can over a common lamp and allowing it to remain there for 12 hours. When I found that it could be made a suc-

cess, either by using a 40 per cent solution, or by keeping the lamp going for a long time with the weak solution, I determined to take up the matter on a larger scale, so I made a tank, out of galvanized iron, capable of holding 40 ten-frame supers of the Langstroth size. The tank is 42 inches wide, by the same in height, and seven feet long. The upper edge is strengthened and held in place by strips of oak sawed from a two-inch plank. Along the sides of the tank these strips were placed on the outside, and at the ends they were placed inside the tank. The strips of oak were held in place by nails driven through the iron (after some holes had been bored) and the edge of each strip that came next to the metal was covered with white lead before the strip was nailed on.

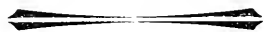
The cover is made of matched hemlock nailed to six basswood cleats; one cleat at each end and the others equally distant apart. The cover was given a good coat of lead and oil on the inside, and while the paint was still green it was covered with heavy paper, then another coat of paint with a sheet of cloth over that covered with paint. The cover is held in place by bolts that pass through the cleats down through the rim attached to the top of the box. In the cover, at the opposite end from where the gas enters, is bored a 5-8 hole which is kept stopped with a plug, except when the tank is filling with gas. As soon as the gas can be smelled escaping the plug is put in place and the blaze turned out; or it might be well to turn the blaze down very low, or else set the can over a lamp and keep it going for six or eight hours longer, and thus be sure of keeping the tank full of gas. As I did not care to use the combs at once, I left them in the box eight or ten days. To secure foul

broody combs for making the test I took them out of colonies that had foul brood, and extracted the honey before putting them in the tank.

Afterwards, I used the combs by putting them in healthy colonies, by putting bees from foul-broody colonies on them, after first starving the bees, and by giving them to a colony that I secured in transferring a colony from a barrel. No foul brood ever developed in any case after the combs had been subjected to the strong fumes in the tank.

Mr. Weber's method is probably all right, but it would be too slow if there were many combs that needed treatment. If I had many combs to be treated, I should think seriously of making a room as tight as possible, a room large enough to hold all of my extracting-combs, and then turning the gas into it. Even if the room was not air-tight, by keeping a stream of gas going into it constantly for several hours, it would be kept full, just as a leaky tank might be kept full if a small stream of water was constantly poured into it.

Clayton, Mich., April 24, 1903.



WARMTH, NOT FRESH AIR, IS THE GREAT NEED OF BEES IN WINTER.

BY IRA BARBER.

Friend Hutchinson—The April Review came safely to hand yesterday, and the first thing that attracted my attention was Mr. Bingham's criticism of my article on airing bees. I might say that the article was not written for Mr. Bingham's benefit, as it has several times been published that he has an ideal repository for winter-

ing bees, and I have no desire to displace him. It was written for that large class of bee-keepers who so often inquire how they can build a place in which to winter their bees, when they probably already have as good a place as they can build.

For more than 25 years I have been trying to get my bees through the winters with no loss. I have tried wintering them in pits, both below and above ground, in rooms in my house, in out-buildings, in cellars, both wet and dry, and I never met with complete success, until an accident one winter closed the ventilator to a small cellar in which I had packed 225 colonies just as snugly as they could be packed. When I visited the cellar in the spring, and found the ventilation completely shut off, and the bees so hot that they were all in a mass together, yet they came out the strongest of any lot of bees that I ever wintered, without the loss of a colony, I concluded that I would try them in the future with no ventilation.

Mr. Bingham does not see why the fresh air should be so baneful to bees. The fresh air is all right for the bees, or for anybody, the trouble is that the bees are too frisky when they get a sniff of it. I could tell of all my long experience in wintering bees, but it would make a very long article, and I will simply say that for the last 20 years, my bees have wintered better without ventilation than they have with it. That is why I now look upon the airing of bees as a step backwards.

Mr. Bingham asks if the large bee-keepers referred to in my article were ever able to winter their bees successfully in cellars until they adopted the plan of feeding sugar syrup to their bees just before putting them into the cellar. In reply I would say that no one in Northern New York feeds sugar to bees for winter use,

unless it may be to keep them from starving.

In regard to my near neighbor, I quoted him simply to let the fresh-air advocates know that the bees wintered as I have said they did, and were in first class shape to do business after a confinement of five months in an atmosphere that was supposed to be unhealthy for them. Every precaution was taken by this neighbor of mine to keep the fresh air out of his cellar when going into it, such as keeping the door closed when anybody went into the cellar. Mr. Bingham says that there is always an abundance of fresh air in a house cellar. If this is true why is there so much said about the air becoming unhealthful for the bees, and of the necessity for ventilators, and the opening of doors?

Mr. Bingham says that bees do not roar in the open air with the temperature at 50 degrees. If he will place a dish of feed under a strong colony, where the bees can get at it without leaving the hive, he will see whether they will roar or not. Feeding a colony in that way puts the bees in about the same condition as they are when moving honey in-doors. The moving of honey, in winter quarters, by individual colonies, does not affect the whole number of colonies, as does a sniff of air from the outside, when a general roar may be looked for.

Mr. Bingham says that bee-keepers long in the pursuit sometimes have suppositions which have grown rapidly and fixedly, as the years advance. Although I have spent my life with the honey bee, I don't think this applies to me. It took me from 1852 to about 1879 to learn that to get my bees through the winter they must be kept warm. Then came the question of how to keep them quiet, and I was

unable to solve it until the accident shut off what I supposed was a necessity, and, for the last 20 years, there has been no trouble. Bee-keepers here have no fears for winter.

Mr. Bingham thinks that 20 years will demonstrate that the temperature of a cement bee-cellar may go up or down without injury to the bees, if the air is kept as pure and dry as it is out of doors. My opinion is that if he keeps on giving ventilation as he does, that in less than 20 years all that he will have left to ventilate will be a hole in the ground.

DeKalb June., N. Y., April 21, 1903.

THE TRUTH ABOUT CUBA— SOMETHING ON THE OTHER SIDE. BY HARRY HOWE.

The readers of bee journals have been given a lot of rose-colored views of Cuban bee-keeping; they have been told of its grand features and big crops, but very little has been said on the other side.

People come here during the tourist season, when the weather is the finest in the world, and write glowing accounts. They forget that we bee-keepers must stay here all of the year; that we must travel when the roads are seas of mud, and work when the air is so moist that everything either rusts or molds. The man who works out of doors has his feet wet half the time.

The summer, too, is the season of the mosquito and the flea; the time when we look in our shoes, in the morning, for scorpions and tarantulas—and find them at other times when we don't look for them.

Malaria prevails everywhere, while consumption claims many victims. The common people have no sanitary

conveniences. The closet, when there is one, is usually in the corner of the kitchen. But we are free from yellow fever and smallpox.

As to honey production, some have had big crops, and we have heard of them, but many have had poor crops and nothing has been said of them. My nearest neighbor has gone down from 800 to 40, in his home yard, in three years. Another put in a ranch between here and QuanaJay, and the bees all died the first season. One of my ranches gave me 14 gallons to the hive the first season, 7½ the next, and 3 this year. This reduction of yield comes from the flowers being plowed up to make room for sugar cane. One man had a fine system of ranches along the stone road between here and Havana, but this year he is moving them back into the wilderness. Stock and general farming have cleared out the honey plants.

The present price of honey is 27 cents a gallon. Wax is 31 cents a pound. But this is Spanish gold upon which there is a discount of about 10 per cent compared with American money. Supplies and freight must be paid for with American money. Things that we buy are high. Put a tariff of 33 1-3 per cent, freight and profit on top of American prices, and you will get something of an idea of the cost of some things. A few things are cheaper—sweet potatoes, for instance.

A prominent queen breeder has scarcely been able to keep his own colonies in queens the past winter, when he had expected to have them to sell to the rest of us.

Some strange stories have been told of the honey plants here. One man told of banana honey. If he got any, he took it from the wasps, for the honey bee is not able to get into the banana blossom. Another told of cocoa nut honey. I have climbed

many cocoanut palms, but have never seen a bee gathering honey from their blossoms. There are vast tracts of land here in natural meadows, and others in scattering forests of a species of palm which yields no honey. Other great tracts are in cane, or some other crop that yields no honey. The honey country that is not already exploited is nearly all situated so far from transportation as to make its occupation unprofitable.

One of the best known bee men in the United States spent a month travelling over the island, and then went home in disgust because he could not find things as he wanted them.

Then the people. There have been two murders within a mile of me, and two more within six miles, this spring. Robberies are too frequent to keep any account of them. This week some one went through the house of my American neighbor. I found 60 frames in one pile, at one of my ranches, where the comb had been cut out and carried away.

I don't mean to imply that Cuba is all bad. I like it well enough to stay here, but there are two sides to the question.

Artemisa, Cuba, March 30, 1903.

THREE MONTHS CAGING OF A QUEEN. LONGEVITY OF BEES. BY M. A. GILL.

Editor Review: About the middle of last July a party here had a three-frame nucleus of black bees into which he put a self-introducing cage containing an Italian Queen from the South. He gave it no more attention, further than to turn back the quilt after three weeks to see if Italian bees had made an appearance, and, as he found none, he naturally concluded that the nucleus was queenless.

On October 10th I came into possession of the nucleus, and, upon examination, found the queen still caged (without an escort) and that the bees had evidently built comb over the open end of the cage—had, in fact, imprisoned the queen instead of liberating her at the proper time.

Thinking the queen had been confined long enough I liberated her. The bees at once balled her, and would have killed her had I not smoked them with tobacco smoke until they fell from the combs.

On the following morning I found the bees and queen in a passive mood, and at once commenced stimulative feeding to see if the queen still retained her natural functions. On the third day I found her laying. I increased the feeding and she proved to be a prolific queen. By Christmas she was the mother of a good colony.

Does this not show that it's not the length of time that a queen is caged that makes successful introduction possible; also that long confinement does not always make a queen incapable of being a good layer; also that 45 days is not quite long enough to fix as the average length of a bee's life during the working season? For, surely, this was during the working season, and the nucleus was still a fair, three-frame nucleus. There was no doubt some brood in the nucleus when the caged queen was introduced, but there is still nearly 70 days left as the age of the younger bees.

I have thought, for some time, that we have families of bees whose natural life will reach 60 days; and if this be so, here is a trait that can be and should be established by careful breeding.

Never mind the number of gold rings, nor the length of tongue, nor how bad they sting—but a queen breeder who can assure me that his bees

have an average life of 60 days can sell me a lot of queens.

Longmont, Col., April 13, 1903.

Bee-Keepers' Review

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W. Z. HUTCHINSON, Editor and Publisher

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Flint, Michigan, May 10, 1903

Twelve hundred and two bee-keepers are now members of the National Association.

Four supers to each colony is the number that Dr. Miller gets ready in advance of the season; and even with that number prepared he was once caught short in harvest time.

The Wisconsin Legislature has increased the appropriation for State Inspector of Apiaries from \$500 to \$700, which was greatly needed. \$500 is not enough to pay for the needed work that an inspector can perform during the season.

A seat in an apiary is a great saving of fatigue. If a queen is to be hunted up, for instance, it is much easier to sit down while doing it. Dr. Miller mentions in his book the use of a common glass-box. The box being of three different dimensions, one has a choice as to height of seat.

Shade for bees in the middle of the day during the heat of the season is probably desirable and profitable, but Dr. Miller says he doesn't believe that bees suffer as much from the hot sun shining directly on the hives, as they do from having the air shut off from them by surrounding objects.

In extracting from heavy, new combs, don't attempt to throw all the honey out of the first side extracted, at the first time the combs are whirled. Run the machine slowly, and throw out about one-half the honey, then turn the combs and throw all of the honey from that side of the combs, then turn them again, and throw out the rest of the honey.

Shaking the combs is the way most of us get the bees off, or the most of them, but Dr. Miller tells us, in his new book, how to "pound" them off. "The comb is held by the corner with one hand, while the other hand pounds sharply on the band that holds the comb. But this manner of pounding nearly every bee may be removed by a few strokes, unless the comb be too heavy."

Galvanized iron may give a metallic taste to honey if the latter is stored in vessels made of the former, at least there have been reports of such results, but Mr. C. A. Huff, of Clayton, Mich., removes this objection by rubbing a lump of beeswax over the inside of the vessels while they are hot from being laid upon a stove. The thin coating of wax adheres to the metal and keeps it from coming in contact with the honey.

Ernest Root, while he and I were making a tour of their factory, pointed

out to me a man working in the wax room, and told me that he was sent here by the Russian government to make a practical study of bee culture. This man is an instructor at the agricultural college at Moscow, and by sending this man to the A. I. Root Co., that government pays this company the compliment of considering it at the front of the apiarian business of the world.

Mr. T. F. Bingham should have been given credit for the item in last Review about keeping a honey knife in water. He told me about it when I was visiting him recently, and how I came to omit giving him credit for it I don't know, as it is always a pleasure to me to give everyone proper credit. Of course, others have told about keeping the knife in hot water, but Mr. Bingham mentioned simply water. By the way, although Mr. Bingham was the inventor of the knife that bears his name, a tool that is perfect in its way, an imperfection in the patent has prevented him from reaping his deserved reward.

"When a colony is beginning to be crowded and there are no colonies needing help, and sometimes even when others do need help, a second story is given. The second story is given below. Putting an empty story below does not cool off the bees like putting one above. The bees can move down as fast as they need room. Indeed, this second story is often given long before it is needed, and sometimes two empty stories are given, for it is a wise thing to have the combs in the care of the bees."—From "Forty Years Among the Bees."

Have confidence in your business or else get out of it. I occasionally meet a man now who is getting more

bees, and establishing out-apiaries, and some of these men tell me that they have had such a step in contemplation for some time, but relatives and friends have discouraged them—cautioned them against putting all their capital into bees. A farmer puts all his capital into his business, so does a merchant, or a manufacturer. Why not a bee-keeper? Of course, these ventures must be made intelligently. Some have said: "Don't risk all of the eggs in one basket," but the most successful men have "put all the eggs in one basket, and then watched that basket."

The National Convention goes to Los Angeles this year. See official notice in another column. California has wanted the convention for a long time, and the holding of the G. A. R. meeting in that State this year gives the desired rates. California has every prospect now of a good crop, and, with low rates on the railroads, and good crops in the West, the prospects are very flattering for a grand meeting. The distance is too far to expect very many from the far East, but, from the Mississippi valley, westward, there ought to be a grand turn out. The meeting will be held in Blanchard's Music Hall, 233 South Broadway. Other particulars will be given as they develop. By the way, E. R. Root has promised to show his pictures with the stereopticon. "Bee-Keeping from the Atlantic to the Pacific, as seen through the Camera and the Stereopticon," is, I believe, the title given this entertainment, and it very fairly describes it. Of course, many bee-keepers in the East have seen these pictures, and heard Mr. Root describe them, but they will be entirely new to those in the far West, and they are certainly a treat to one who has not seen them.

Mr. Brodbeck writes me that the Californians expect to use the evening of the first day in giving a reception to the visitors.

Economy in cutting up lumber was one of the interesting things that I saw practiced recently in Medina, Ohio. The man who cuts up the lumber can save or waste his day's wages many times over by the way in which he cuts up lumber. The lumber used costs about \$28 a thousand, but, by care in cutting out the knots, the hives are made of lumber that is so clear of knots that if purchased of that quality, for that purpose alone, it would cost \$80 a thousand. In making a hive, several lengths of pieces are used. The sides, ends, top-bars, end-bars, bottom-bars for the frames, the ends to the section-holders, etc., are each a different length from the others. When the next length to be cut off for a side contains a loose knot the workman decides whether he will cut an end to a hive, or end-bars for frames, or end-bars to section-holders. Sometimes a knot is left in a short piece that is to be used for the ends to section-holders, for instance, and strips sawed off each side of the knot. In short, the cutting is so done that about all of the lumber that is wasted is the loose knots. Mr. Root told me that it was only by just such close, careful and economical management, this looking closely after the waste in what might be termed details, that it was possible to make money in the manufacturing business.

The cost of manufacturing and selling goods is not so well understood by some as it ought to be. Many have figured up how much it cost to buy enough lumber for a hive, how long it

took them to saw it up for a hive, if they had a foot-power saw, how long it took to nail it together and paint it, etc., and decided that the makers and sellers of hives and supplies were actually fleecing their customers. I had quite a talk recently with Ernest Root on this point. As I have mentioned elsewhere, the Roots have their business perfectly systemized. They know exactly what it costs them to produce goods in each and all of their different departments; and Mr. Root told me that, upon an average, they were obliged to add 85 per cent to the actual cost for what are usually termed "overhead expenses." That is, for taxes, interest on money invested, wear and tear on tools and machinery, insurance, office-help, lights, etc. He said it was the usual practice of manufacturers to add 100 per cent for these expenses. The manufacturer who would ignore them, and base his profits upon the apparent actual cost of production would soon go to the wall. If the bee-keeper has the time, can buy lumber advantageously, and has some power to cut up his lumber, it is likely that he may in some instances make his hives more cheaply than he can buy them, but let him go into the business of making them for sale, go into it on a large scale, and he will soon find that other factors appear of which he had not even dreamed.

HOW TO SEND A COIN BY MAIL.

Take a piece of cardboard, or strawboard, a little smaller than the envelope that is to be used, and make a longitudinal slit in one side of the strawboard. That is, start out as though you were going to split the cardboard in two, longitudinally, thus making two thinner pieces out of the one. Make this opening about the center of one edge, enlarging it until the

coin can be slipped in out of sight. The pressure of the cardboards holds the coin in place.

An illustration of how out-apiaries may help to make bee-keeping more profitable was given me recently while visiting at Mr. Bingham's, in Farwell, Michigan. Farwell is located upon high, sandy soil, and the honey crop there last year was light—about 20 pounds per colony. Clare, only four miles away, is lower, and the soil is clay, and bee-keepers in that locality enjoyed an excellent harvest. This year it may be Farwell's turn to have a good crop. An apiary divided between the two localities would almost double the opportunities for success.

THE VALUE OF A PLAN.

How few begin life with a definite plan. They take up whatever employment seems most convenient or desirable, and drift from one thing to another. A man should early decide what is to be his life-work, and then plan accordingly. We ought to get all of the enjoyment possible out of life, and there is no more effective method than in being of some benefit to our fellow mortals. Our success in this direction will be largely in proportion to the perfection of our plans. If we have some special object in view, and plan for its accomplishment, each day, month and year will fit us more perfectly for success. There are not only life-plans, but plans for shorter seasons, for a year, or even for a day. We may be compelled to change our plans, better this than to have no plan. With a plan we are working intelligently, making one act help another, making all of our acts fit together into a perfect whole. The acts of a man with a plan are like a well

disciplined army; those of the man without a plan as a mob. Have a plan.

THE COLORADO LAW AGAINST THE ADULTERATION OF HONEY.

The bee-keepers of Colorado have secured the passage of a law that ought to effectually put an end to the traffic in adulterated honey or wax in their State. I will not use space to quote it entire, but the following is a synopsis:

"No person shall sell any adulterated or imitation honey or beeswax, unless prominently labeled with the percentages of its ingredients, or labeled 'Imitation,' and unless the seller informs the purchaser; nor shall such goods be shipped or receipted for unless properly labeled, nor shall sales of improperly labeled goods have any standing in law, nor shall the word 'honey' be used as part of the trade name of any article unless honey is really a part of it; and the executive of any state office regulating any food products shall cause samples of suspected goods to be analyzed, and prosecute violations of the law in the name of the People of the State of Colorado; and on conviction, the goods shall be confiscated, and the offender fined \$20 to \$500 and costs."

A NEW BOOK ON QUEEN REARING AND THE TWENTIETH CENTURY, IDEAL BEE HIVE.

Mr. T. K. Massie, of Tophet, W. Va., has written a book upon the above subjects. While I have had the book in hand for some time, other duties have prevented me from giving it a complete reading. I have only dipped into it here and there, but I am carrying it around with me on my trips, and will eventually read it through.

He makes some good points. I noticed one where he points out the value of young bees for queen rearing. Another chapter gives an excellent method for direct introduction of queens. The book also gives very complete descriptions of a double-brood-chamber, cubical hive using closed-end frames supported by nails. Another very strong feature of the book is its vehement denunciation of bee-keepers who cling to antiquated ideas, who set up a "standard," and refuse to get out of the "rut." The price of the book is 25 cts. I can club it with the Review at \$1.15 for both Review and book.

TRAFFIC IN EMPTY COMBS MIGHT SPREAD FOUL BROOD.

Occasionally we see advertisements offering empty combs for sale, and sometimes there are offers to buy, but a correspondent suggests that, considering the prevalence of foul brood, such traffic might better be discontinued. If infected combs were shipped, not only would they establish foul brood in the apiary of the buyer, but as such combs are sometimes shipped in open boxes or crates, they would be likely to spread the disease all along the route at any place where the bees might gain access to them.

QUEENLESS BEES ARE IRRITABLE.

All bee-keepers know that the bees of a queenless colony are quite liable to be irritable while being handled, but Mr. Boardman called my attention to the fact that they are irritable at all times, and greatly inclined to follow the operator about and annoy him. If the bee-keeper desires a peaceable apiary let him avoid queenless colonies. Mr. Boardman said that when Ernest Root visited

him once, he expressed surprise that that not even a single bee buzzed threateningly about his ears, and he was informed that there were no queenless colonies. I can testify as to the good nature of Mr. Boardman's bees. Although the day was cool, and we spent much time in the apiary and opened hives, not a bee paid the least attention to us.

THE NEXT NATIONAL CONVENTION TO BE HELD IN CALIFORNIA.

The Secretary of the Executive Board of the National Bee-Keepers' Association has sent out the following notice:

Los Angeles, California, has been selected by the Executive committee as the place for holding the next annual meeting of the National Bee-Keepers' Association, and August 18, 19 and 20, 1903, are the dates.

The main reason for deciding on Los Angeles was on account of the low railroad rates in force at the time of the Grand Army meeting at San Francisco, which is held the same week, and the same rates apply to Los Angeles.

Further particulars will appear in the regular official notice to be issued by the Secretary of the Association later on, as soon as definite arrangements can be made as to hall for holding the meeting, hotel accommodations etc.

We may say that San Antonio, Tex., and Salt Lake City, Utah, made honorable and strenuous efforts to secure this year's meeting of the National Bee-Keepers' Association, but those who have had the most experience know that in order to have the best and fullest attendance, the meeting must be held when low railroad rates all over the whole country can be taken advantage of, and the Grand Army

beats them all in that line. So that fact had great weight with the committee in deciding the matter.

Executive Committee,

George W. York, Sec.

BUSINESS BEE-KEEPING AND PROSPERITY.

My ambition may seem ambitious, but I sincerely desire to aid bee-keepers in becoming more prosperous, to induce them to adopt better business methods, and secure a competency, even if they do not amass great wealth. For instance, it is folly to for a man to attempt to gain a livelihood by keeping bees in a poor location. Either secure a good location, or else give up the business. This would seem like a self-evident truth, yet there are hundreds of bee-keepers who have it yet to learn. Another thing: Keep enough bees. It seems strange that so many men will dally along, year after year, with about one-fourth the bees that they could manage if they would only wake up to the possibilities of modern methods and ideas. Then comes marketing and it is a mighty problem, but it must be wrestled with and overcome, and reduced to a system, as has been done with other agricultural products.

The number of bee-keepers may never increase, but I have faith to believe that I shall live to see them more prosperous from the adoption of modern business ideas and methods.

SOAP THAT WILL REMOVE PROPOLIS.

Lava Soap, manufactured by Wm. Waltke & Co., St. Louis, Mo., will remove propolis from the fingers. Mr. Chalon Fowls told me this when I visited him recently. He had difficulty in finding the soap in the stores, and when his grocer finally secured a supply, Mr. Fowls bought a whole box

that he might not again be without it. He gave me a cake to bring home, and the boys that work in the printing office gave it a trial, and are enthusiastic over it. It is the first thing they had tried that would completely remove the ink stains from their fingers. Then I tried it when my fingers were all stained up with "pyro" in developing photographic plates, and the stains disappeared as by magic. Heretofore I have been compelled to go around for several days with my fingers stained—go until it finally wore off. It is particularly adapted to the use of any one handling greasy, inky, or sticky substances. Every bee-keeper knows what a comfort it would be to have his fingers cleaned of the sticky propolis after his day's work was done, and Mr. Fowls says that it will do this. I think it would be a good thing if some dealer, like the Roots, for instance, would handle this soap, then bee-keepers, when ordering their supplies, could order a few cakes of this soap. I might add that while the soap is such an excellent solvent of sticky, greasy substances, it is perfectly harmless to the skin.



PREVENTING GRANULATION OF HONEY.

Mr. H. R. Boardman, of East Townsend, Ohio, professes to have discovered a practical method of preventing granulation of extracted honey, without in the least impairing its quality. When visiting him recently, he showed me some jelly glasses filled with honey that had been treated two years ago, it having withstood the rigors of two winters, exposed to a low temperature, without having lost its clear and liquid character. He said that he did not care to give it to the public, and then have a lot of bee-keepers exclaim: "Oh, I knew and practiced that years ago," as has been

done regarding nearly all of the discoveries and inventions that he has given to the public. He says that if any one now knows of any practical, effective method of preventing granulation, without impairing the quality of extracted honey, he would like to have them now come forward and describe it, or else "forever after hold their peace."

Now then, friends, you can readily see that the discovery of a practical method of preventing granulation is of vast importance, and, if you know of such a method, let us hear of it at once; because, having been given this warning, you cannot fairly lay claim to it if you do not publish it until after Mr. Boardman has made public his method.



THE USE OF FORMALDEHYDE IN DESTROYING FOUL BROOD.

Bee-keepers are greatly given to fads and enthusiasm over new things. It's burrah boys, here is something that is going to turn things topsy turvy, and revolutionize bee-keeping, and the journals are full of the subject, and then, almost before we know it, it is a case of "the old love off and the new love on." One fad has been dropped for another. Enthusiasm is a good thing. It moves the world. But care and caution, and "proving all things, holding fast that which is good," are also excellent. The latest thing to attract attention seems to be that of the use of formalin gas for destroying foul brood in combs. The scientific man, and the common bee-keeper seem to have succeeded. When a larva has died from foul brood, and has dried down into a hard scale, and the cell has been filled with honey, and sealed over with wax, it does not look reasonable to me that the gas could reach the germs in that scale and destroy

them, yet it has been asserted that it will do this very thing. I must say that Mr. Huff was very reluctant to have published an account of his experiments. He wished first to give the matter a more thorough test the coming season, but he finally consented to tell exactly what he had done, and then if others wish to commence where he has left off, they can do so. There will probably be more experiments made the coming season than there would have been if he had kept still, and we will have more experience upon which to base our conclusions.

Suppose that formalin gas will do all that we hope it will, it will save rendering the combs into wax, the expense of having the wax made into foundation, and the work of putting the foundation into the frames. There is still another point: While the well-informed bee-keeper may make a success in using the drug, the common, or "farmer-bee-keeper," will probably not bother with it, and might not succeed if he did. I see that some have used it with an atomizer. While this may be all right in some instances, I should scarcely expect it to be so penetrating as the use of the gas in a tight tank.

As I have said so many times about other things, let us not lose our heads over it, and let us not toss it aside with a sneer and say it won't accomplish anything because some may have failed. Mr. Huff would have considered it a failure if he had not learned that he had made the mistake of using a very weak solution.



THE PLEASURES AND PENALTIES OF AUTOMOBILING.

My First Automobile Ride was taken a few days ago with Bro. Root, of

Medina, Ohio. He has a new machine and is learning the ins and outs of automobilizing. We spent perhaps one-half, or three-fourths, of an hour trying the machine on the roads around Medina. Ernest asked me, after our return, how far I thought we had ridden. I thought about five miles. He figured up the distance, and found that it was nearer ten miles. The speed on good roads is probably much greater than it appears. Of course, there is a novelty in this method of locomotion, but it requires close attention on the part of the driver, much more so than in driving a horse, as a horse soon learns to keep the track, while the springs necessary to hold up so heavy a conveyance must be much heavier than those in a carriage, which makes the riding over rough roads more "jolty" with an auto than with a carriage. Another annoyance in automobilizing is the frequent meeting and passing of teams. Usually the machine must be stopped. Not only this, but the engine must be shut down, which necessitates the getting out and starting it after passing the team. Sometimes it is necessary to get out and lead horses by it. All this is a campaign of education. Years ago bicyclists had to pass through the same experiences—now, any horse would be ashamed to notice a bicycle. By the way, a single horse or team out in the country seems called upon to make a fuss about meeting a strange object, while it may pass and repass in town almost unheeded. Perhaps it is because it expects to see strange sights in town, and perhaps it is because of the companionship of so many other horses hitched alongside, and who show no signs of fear. Two or three men together are often quite brave where one alone would be a coward.

Ernest Root expects to use his auto-

mobile in making tours among bee-keepers, the same as he did years ago with his bicycle. It is possible that automobiles will yet be used by bee-keepers in visiting their out-apiaries. I suppose the engine might be rigged to run the honey extractor.



SOME HINTS ON OVERSTOCKING.

Overstocking, or deciding upon the number of colonies of bees that may be profitably kept in one locality, is a difficult problem to decide. Dr. Miller, in his new book, says: "Somewhere there is surely a limit beyond which one cannot profitably increase the number of colonies in an apiary, but just where that limit is can, perhaps, never be learned. If I were obliged to make a guess, I should say about 80 colonies in one apiary is the limit in my locality." Localities and seasons differ so greatly that it will never be possible to do more than approximate the number of colonies that may be profitably kept in one locality; and a different approximation must be made for each locality. Not only this, but it will require several years of experience before anything like a correct estimate can be made. There is still another point: The honey producing resources of a locality may change with the years. To illustrate: Years ago the basswoods of Northern Michigan produced immense crops of honey. It is doubtful if there could be bees enough (in any reasonable quantity) put down in one apiary, where immense forests of basswood are yielding their best, to overstock the locality. Lately I was talking with Mr. S. D. Chapman, of Northern Michigan, and he was telling of the great crops of basswood honey he secured years ago. One time Mr. Heddon was visiting him, and, as the bees in a large apiary were piling into the hives with their loads of bass-

wood honey, Mr. Chapman asked: "About how many colonies do you think would be required now to overstock this locality?" Mr. Heddon thought a few moments and finally said: "About one thousand." While he was probably correct, it should be borne in mind that a basswood harvest does not last all of the year, and the number of colonies that would not overstock a locality during the height of a good basswood flow, might seriously overstock it during the rest of the season.

By the way, the basswood was cut off in the vicinity of Mr. Chapman's apiary until bee-keeping was no longer profitable. The country was new, very little of it being cleared, and when the basswood was gone, there was scarcely any bee pasturage left. There were a few years when Mr. Chapman seriously contemplated abandoning bee-keeping, but, with the lumbering off of the hard timber, the ground was left so open that the wild red raspberries sprung up in myriads, and last year 150 colonies furnished him \$1,000 worth of raspberry honey, and he is inclined to put at least 200 colonies in one locality.

In deciding this question of overstocking, it must not be forgotten that it costs more to manage bees away from home than it does at home, and that the average yield of the home-apiary might be cut down considerably as the result of an increase in numbers, before it would be profitable to move some of the bees to a new location. After once embarking in the out-apiary business, the establishing of an additional apiary is not so serious an affair as was that of the first one established. For instance, if a team was bought for use in visiting the first apiary, it can be used in going to any apiaries that are subsequently started. The starting of an out-apiary may ne-

cessitate a change of methods, but once these changes are made, more apiaries may be started without any additional changes being made.

THE VALUE OF SYSTEM.

During a recent visit to the A. I. Root Co., I was much pleased with the completeness with which their business has been systematized. Every office was well provided with drawers, pigeon-holes and filing cabinets. They have also recently adopted the vertical system of filing their correspondence. The ordinary system is to file letters alphabetically, and to keep copies of correspondence in a copy book. This is better than no system, but it throws all the correspondence of the letter "H," for instance, under which head there may be letters from fifty men, into one pocket. In order to find a letter from Hutchinson, all of this correspondence must be looked over. Then again, to find a copy of any former letter written to Hutchinson, it must be hunted up in the copy-book. With a limited business this is not a serious matter, but in a large business, like that of the A. I. Root Co., there must be still more system, and this is accomplished by giving each correspondent a number, and putting all of his letters in an envelope, accompanying them with copies of the replies made to these letters. All the letters that I have written to Mr. Root in a long time are all together, by themselves, in the order in which they have been received, placed in a large envelope, and in with them are copies of the replies that have been sent to me. This envelope is given a number, and set up on edge with thousands of other envelopes, all arranged in regular order, numerically, in drawers. If they wish to refer to any correspond-

ence that they have had with me, they simply look in an alphabetical index for my name, see what my number is, turn to the drawer, and it is only the work of a moment to fish out the proper envelope containing the whole "story" running back for months or years.

This is a sample of the ways in which they are able, at a moment's notice, to put their fingers upon any desired information. The names and addresses to which price lists and catalogues are sent, are upon cards arranged alphabetically according to State and towns. There are ways for telling from what source the name was received, when it was received, and if any business has come from this man. If no business comes in four years the card is thrown out. At seasonable times catalogues are sent out to this list of names. Mr. Root told me that they attributed a large share of their success to the thorough manner in which their business had been systematized.

EXTRACTED

FORMALIN GAS.

How it may be Used in Destroying the
Germs of Foul Brood in Combs.

Professor F. C. Harrison, bacteriologist in the Ontario Agricultural College, has, for several years, been paying special attention to foul brood, and, at the Ontario Bee-Keeper's Convention, held in Woodstock, in December, 1904, he gave the result of some of these experiments; among others, that of fumigating foul broody combs with formalin gas. From a report published by the American Bee Journal,

(page 40, Jan. 16, 1902) I copy an extract from the Professors' talk. It was this report of the Professor's experiments that stirred up Mr. Huff to give the gas a trial, with the results as given in his article on another page of this issue. Here is the extract:

"Prof. F. C. Harrison, bacteriologist, who has recently returned from a year or more of study at the leading bacteriological institute in Europe, gave the result of his work during the past season with foul brood. He stated that the work undertaken with foul brood at the Ontario Agricultural College during the past year had been rather limited. The only thing attempted this year was some means of destroying germs of foul brood in combs. One remedy had met with good success; that was, disinfecting combs and hives with the vapor of formalin.

Pieces of comb had been taken containing wax and comb several years old, dead brood, capped brood, and cells of honey into which had been put foul brood germs. These were placed in a box the size of an ordinary hive, the lower entrance in the box having been plugged, leaving only sufficient room for the entrance of a rubber hose coming from the disinfecting apparatus, similar to that for disinfecting plants, etc. The formalin gas apparatus was as follows:

An alcohol lamp, and upon it a reservoir with a 40 per cent solution of formalin. When the alcohol lamp was lighted the gas was soon generated. At the top of the box a one-half inch opening had been left; out of this the atmosphere passed as the box filled with formalin gas. When the box was full the gas would pass out of the upper orifice, detected by the odor. The apparatus was then withdrawn, both openings plugged, and the comb left under the influence of the gas for one hour, after which exposure

no growth was obtained, four tests in all having been made. The honey-cells known to be affected gave no growth. The pressure obtained in generating the gas might in a measure account for the results. This cure would be practical in a large apiary. Other appliances used in disinfecting would answer."

ECONOMICAL WORK.

**Learn to Decide Upon and Perform Only
Work that is Profitable.**

There is no doubt that a great deal of the work done in many apiaries is wholly unnecessary, and might be characterized as "fussing." Labor is the most expensive factor in honey production, and all possible short-cuts should be taken advantage of. The questions should always be asked: Does this work pay? Will it bring in more than it costs? Might not the time be used to better advantage in doing something else?

In a line with these thoughts, Mr. F. L. Thompson contributed an excellent article last July to the *Progressive Bee-Keeper*. It is a little lengthy, but I consider it well worth the room it occupies. Mr. Thompson says:—

"As important as anything, in making money from bees, is to work so that every stroke tells. It is easy to put a great deal of work on bees that amounts to little or nothing, as to burn money on them. This is why the advice is always given, and always should be given, to learn bee-culture by first working with a practical bee-keeper. Some little knowledge of economical work may be gained by reading, but nothing makes it stick like experience; and even when apparently fully known by hearsay, the test of experience

shows that somehow it was not realized. Still, for those who are not so situated as to work under the guidance of others, it is worth something to get started right.

What are the really necessary things to do with bees? The farmer would say, hive swarms (when you see them) and put on supers. The beginner who has been primed by a bee-book would be apt to say, stimulate brood-rearing, equalize stores, make nuclei, raise queens, examine once a week, feed for winter, etc. The practical course is by no means half-way between these two extremes; it lies much nearer to the farmer's method than to the amateur's and has long ago been tersely expressed by "The greatest amount of honey with the least amount of labor." The farmer loses much honey by not doing a few things at the right season; the professional bee-keeper does just those things but no more. Briefly, the necessary things are to secure the right conditions for wintering, either by a good cellar, or proper packing, or arrangement of the tops of the hives; to examine early in the spring, hurriedly, with as little disturbance as possible, for queenlessness or disease (if foul brood is in the neighborhood) and once later in the spring with more care for disease and sufficiency of stores (feeding when found necessary), taking advantage of this inspection to do all desirable scraping and pruning of propolis and burr combs, and clipping of queens; to get surplus receptacles and hives for increase ready beforehand; to adopt and follow a simple and uniform plan for swarming management, either hiving first swarms and preventing after-swarming by approved methods, or making artificial swarms, or preventing swarming; to requeen poor colonies; to put on a super, and add more supers, at just the right time, and to

remove each finished super promptly, to scrape, grade and pack the honey in accordance with a definite system; to have it ready for market as early as possible, so that any chances for selling it to good advantage may not be lost; and to keep most of the drone-comb, and all imperfect or irregular combs, replaced by straight worker combs. It follows that a thorough-going producer of honey, in an average location, who does not rear queens, will not look at the brood chambers of his colonies more than three or four times a year, and thoroughly look them over not more than once.

Now, every beginner who has read a little will see at once that there are some omissions in the above. It is one of the tantalizing features of bee culture that some apparently competent authorities think some things are vital, and other equally competent authorities think they are not. Locality accounts for much of this. For example, it is not necessary to be very particular to clean out the bottom boards of most of the hives in spring, but in some parts of the East it appears to be very necessary. But when two competent persons of different opinions are in similar localities, they cannot both be right. One may be competent in general work, but lacking in scientific accuracy in drawing inferences. He may be one of those who think it a virtue to say I know, and a weakness to say, I don't know. This union of genuineness with false pretences deceives himself and many others. For this reason so simple a matter as drawing up the bare essentials of honey-production cannot be carried through without running counter to some fixed ideas though if all would only think hard and honestly they could agree which matters are improved, however much they might differ in their opinions on these unimproved

matters; for proof or lack of proof is simply a matter of good logic.

Stimulative feeding for spring is one practice whose value is unproved, hence it cannot be included in the list of essentials. It has been said lately it is desirable in Colorado but convincing proof has not been given. If feeding stimulates that does not prove that the stimulation is profitable. From the view point of this locality, there are two questions involved: 1. Which is better, a strong colony of old bees, whose vitality is unimpaired by previous brood-rearing, or a weak colony of young bees thirty-seven days before the flow, that being the time required to rear honey-gatherers from the egg? 2. When natural pollen (the best kind of a stimulant) begins, as it does here, more than thirty-seven days before the flow, and continues without a break, is it any additional stimulation to feed thin honey? In answer to the first question, one experience in cellar-wintering here shows that a comparatively late start in brood-rearing with strong colonies of vigorous old bees, which start was still, however, more than thirty-seven days before the flow, produced results just as good as the usual handful of brood kept up from January on, resulting in weak colonies by the first of May. To be sure, natural pollen begins rather late here, not till the last week of April, and bees will take artificial pollen eagerly before that time, and it certainly does stimulate them; but it is very doubtful whether that stimulation is any real good. As to the second question, anyone familiar with the normal aspect of the brood-chambers here in the middle of May—brood sheets of brood with comparatively few bees—and who concludes that the bees can be stimulated more than they are, must have some considerations in mind which are not apparent to the

understanding of this writer. If there is one thing in which theoretical views are dominant it is in this matter of stimulation. Where are the proofs?

The proper method of keeping the hives free of drone-comb is also open to much difference of opinion. By the time the readers get this issue it will be the middle of July, just the time to test the after results of hiving swarms on starters in the brood-chamber vs. full sheets of foundation. Anyone who has ever tried it knows how much time is consumed in wiring frames, and what an expense it is to buy full sheets of foundation. Moreover, some comb-honey producers have made comparative tests of the amount of surplus procured from swarms hived on full sheets in the brood chamber, compared with the surplus from others hived on starters in the brood-chamber, and the swarms with starters below came out ahead; naturally, for with full sheets below too much honey is stored below at the very start, at the expense of the surplus department. Compare the plan of hiving on starters, then removing the frames containing drone-combs as soon as the whole brood-chamber is built out, substituting full sheets of foundation for those few combs. If this is done when there is still plenty of time before the flow stops for the bees to get their brood-nest in normal condition for winter by having the major portion of each comb stuffed full of sealed honey, one will be the gainer by as many sheets of foundation as would have been used in those frames which actually contain all worker comb built from starters. Yes, but how about those extra combs taken out? Not a bit of loss. Don't all bee keepers sooner or later bemoan their lack of foresight in not having some extra combs of honey? Who would ever use a feeder, and buy feed, to bring up a spring shortage of stores,

if he could only slip in combs of honey and be done with it? By using the worker portions of some of those combs to patch the rest with, leaving enough for starters, one gets a lot of worker honey-combs for next spring's use, some frames with starters of comb for next summer's use, some trimmings of drone honey for the table, out of a miscellaneous lot containing corners and streaks of drone-comb; or, if no spring feeding is required, those completed combs can be used to replace the drone-combs of next season. It is also possible to wait until the next April before doing this work, but that is not so well, for then foundation cannot be used, in this latitude, to replace the combs removed, but extra drawn combs would be required for the purpose; and, too, a little delay of the work, carrying it into May, means some chunks of drone-comb. By thus using foundation only to replace actual drone combs, instead of in the whole brood-chamber, when the bees will be sure to build more than half all worker combs anyway, one saves the labor of wiring four to six frames to the hive, and saves the expense of four to six sheets of foundation to the hive and has more honey."

SWARMING IN OUT-APIARIES.

**How to Manage it so that Constant Watching
Is not Needed.**

Quite frequently, when I am telling some bee-keeper how Mr. M. A. Gill and wife, of Colorado, manage 700 colonies for comb honey, visiting an apiary every day in the week, my listener will ask "how about swarming? I should think that they would lose lots of swarms." They don't, and Mr.

Gill tells, in the *Rocky Mountain Bee Journal* exactly how he manages. He says:

"First, I will say, I do everything I can to prevent swarming, chiefest of which is to get on surplus arrangements too soon rather than too late, and never allow the bees to get into that clogged condition so conducive to swarming. My plan involves careful painstaking and hard work, and you would need one good manipulator to work with you in an apiary of from 100 to 150 colonies one day each week.

My plan is, perhaps, as close to nature as any plan yet devised, and in carrying it out I follow Josh Billing's advice about setting hens. Josh says, never set your hen till she wants to set. Applying this wise plan in the making of artificial swarms, I go to an apiary just before swarming time, so as to establish a date, and give every colony an examination for swarming and draw from all that show any indication of swarming by distributing brood among the weaker colonies. This will make them safe to leave for six days.

In six days I again visit them with my helper (in my case it's my wife and I am the helper, as there is considerable lifting to do) and carefully examine every colony, and every colony that shows a disposition to swarm is simply shook (there go Root and Miller into another scrap) according to the Colorado plan.

When I carry out this plan I do it heroically, and when I carry the old hive to the new stand I know it's fixed from all after-swarming, as I only leave just enough bees to care for the brood, and it's surprising how few it takes, as the brood is hatching very fast at that time of the year.

The new swarm on the old stand having received all the working force, and in fact more bees than a natural

swarm, will give a good account of itself.

The first time going over them (after your established date) you will perhaps find from six to ten per cent that show a disposition to swarm; the next time from twelve to fifteen per cent; the next time, which is the third week of swarming, back to from five to ten per cent; the next visit should practically close the season.

If the swarms in the parent hives are not satisfactory when the brood is hatched, I unite them so they will be in condition for the August flow, which you know is generally quite good with us.

As I said before, this plan means work, for when you step into an apiary of, say, 125 colonies, all supered, and thoroughly go through them all and make from ten to fifteen swarms (after finding the queens) and properly level up the hives and leave the apiary in good condition and safe to leave for another six days, you will admit you have done a days' work, even with a good helper.

Some will say its not safe to leave them that long and that swarms will be lost. I say, no, not if every swarm is shaken that has eggs in the cell cups. My experience is that very few colonies in normal condition cast swarms until they are good and ready.

I have not given much of minor detail for the execution of this plan as my time is now limited.

Swarming at the best is one provoking and perplexing feature of the season's work, and my motto in producing comb honey is to have as little increase as possible, but when a colony wants to swarm, I swarm it, and the above plan is more satisfactory to me than to hire some man or boy to go to sleep under a tree and allow many more swarms to abscond than by the above method.

Of course this method has no more prime swarms than natural swarming, and has the advantage of no after-swarms, and I think will prove satisfactory to any one who does the work thoroughly."

TRANSFERRING BEES.

The Modern Method is far Ahead of the old
Method of Cobbling up Crooked Combs
and Tying them into Frames.

Very frequently I receive inquiries reading like the following:

"I have 20 colonies of black bees in old box hives, and I wish to transfer them and introduce Italians queens. Please give me some light on the subject."

On this point I can do no better than to copy one of the chapters from Mr. Heddon's book, "Success in Bee Culture." It reads as follows:

"As I cannot advise the practice, I will not describe the old method of transferring bees, by opening the hives, cutting out the combs full of brood and honey, and covered with bees, cutting them in pieces to fill, or partially fill, different shapes of frames, tying them into the same, and finally ending with a very imperfect job compared with that given us by the new method, which has been published in some of the papers and given the name of Modern Transferring, which I believe has been credited by common consent to the author.

I will now tell you how I accomplish this perfect change of a colony, from one hive to another, by quoting from my article on page 562 of *Gleanings*, for 1885:

About swarming time I take one of my Langstroth hives, containing eight Given pressed wire frames of foundation, and, with smoker in hand, I ap-

proach the hive to be transferred. First, I drive the old queen and a majority of the bees into my living-box. I then remove the old hive a few feet backward, reversing the entrance, placing the new one in its place, and run in the forced swarm. In two days I find eight new straight combs with every cell worker, and containing a good start of brood. Twenty-one days after the transfer I drive the old hive clean of all its bees, uniting them with the former drive, and put on the boxes if they are not already on. If there is any nectar in the flowers, this colony will show you comb honey. I run them together as I would one colony in two parts. Now to the old beeless hive. Of course, there is no brood left, unless a little drone-brood, and we have before us some combs for wax, for more foundation, and some first-class kindling wood.

If you have no method by which you can use a hive full of frames of full sheets of foundation, running a prime swarm onto them at once, by all means procure it without delay. But if any one has a mania for cutting up combs and fitting them into frames, the method given above does not prohibit them from using all the straight worker-combs the old hive contains, after first extracting the honey from them. Should any one wish to increase his colonies at the same time he transfers, only the following deviations from the above are necessary: Run the second drive into another hive of full frames of foundation, and use the old hive as before. Now that we have foundation perfected, so that the bees will draw the line or side walls to full breeding depth, in from two to three days, why fuss with the old comb from the old hive? Having once experienced the advantages to be attained by using the above method, I shall

certainly never go back to the old one. All of you know what a nuisance a few odd-sized hives are in the apiary; also some who have just started, wish they had adopted some other style of hive. The above method of transferring will get all such out of their trouble.

The cost of foundation and new hives is fully made up by the better combs, and you have the change to better style of hive thrown into the bargain. I have thoroughly tested the results of the plan herein described, and am speaking from experience.

We have just practiced the above upon seventy-two colonies, and without a failure or mishap of any sort. I purchased sixteen colonies of bees; that is, I purchased the bees, brood and honey, with the agreement that I should return the hives and empty combs, which I have done. We made each one cover two sets of combs in two brood-chambers, with two queens, besides the surplus sets used above for extracting, and all are rousing strong. When you plan to double your colonies, you remove the old colony to an entirely new location, when you make the first drive. It is now my opinion, that, even without the use of comb foundation, in the days when we had none, this plan of transferring would have been the preferable one. As we are cutting out the old comb for wax, we transfer any that we find, that are perfect, now that they are all clear from bees, and brood, after first extracting all the honey from them."

If it is desired to Italianize it would only be necessary to have queens on hand at the time of the first drive. Cage a queen in each new hive before shaking the driven swarm down in front of the hive, screening the entrance to the hive with queen-excluding metal, thus catching the old, black

queen outside the hive. As this work will be done at a time when honey is coming in, the plan will leave the bees hopelessly queenless, and there would be practically no risk in introducing a queen in this manner. If the bees seemed peaceably inclined the queen might be released the next day by allowing the bees to eat out candy from the entrance of the cage.

SPECIAL ADVANTAGES FOR THE MANUFACTURE OF BEE SUPPLIES.

RIVER FALLS, Wis., April 28, 1903.

W. Z. Hutchinson, Flint, Mich.

Dear Sir: On March 17 we had a severe flood. My old mill dam, which has stood for 35 years, gave way, and I was obliged to remove it entirely. I purchased a power immediately above, and am now engaged in erecting a 26 foot dam which will make a total fall of 50 feet, and supply water-power for the greater part of the year in excess of 100 horse-power. I will enlarge the hive department, and put in some new labor saving machines, which, together with cheap power, and cheap lumber, and the best help I can secure, will, I hope, enable me to build up one of the finest Bee Supply Factories in the world. I aim to supply the Western trade, and it is plain to see that I have natural advantages which my friends in the East do not have, and can never enjoy. We will be running again within a month, and look for patronage from old and new friends.

W. H. PUTNAM,

503-1f

River Falls, Wis.

For Your Vacation Trip.

The Yellowstone Park, the nation's playground, is larger than the State of Delaware and nearly twice as large as Rhode Island. As in size it exceeds all other national parks of the world combined, so in grandeur and scenery it is unequalled. Here are located the eight great geysers of the world. Mount Washburn, one of the peaks in the park, has an altitude of 10,388 feet. The whole is an area of wonders unparalleled. It is from 1,000 to 5,000 feet above the level of the sea and is therefore within the zone of two seasons.

But to really know this wonderland you should take a trip through there. You cannot spend a vacation season more

profitably or more pleasantly. The Chicago, Milwaukee & St. Paul Railway offers choice of routes to and from Yellowstone Park. If you are interested, complete information about the cost of the trip, choice of routes, train service and tickets will be furnished on request.

F. A. Miller, General Passenger Agent, Chicago.

Robt. C. Jones, Michigan Passenger Agent, 32 Campus Martius, Detroit, Mich.

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Eustis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

Names of Bee-Keepers TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged in alphabetically (in the largest States), and, although this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a type writer, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly, in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky..... 182	N. C..... 60
Ark..... 130	Kans.... 350	New Mex. 56
Ala..... 80	La..... 38	Oregon 104
Calif... 378	Mo..... 500	Ohio.... 1120
Colo.... 228	Minn.... 334	Penn.... 912
Canada 846	Mich.... 1770	R. I..... 46
Conn... 162	Ma.... 275	S. C..... 40
Dak.... 25	Md..... 94	Tenn.... 176
Del.... 18	Maine 200	Tex..... 270
Fla.... 100	Miss... 70	Utah.... 68
Ga.... 90	N. Y.... 1312	Vt..... 160
Ind.... 744	Neb.... 345	Vt..... 182
Ills.... 900	N. J.... 130	W. Va... 172
Iowa... 800	N. H... 126	Wash... 128
		Wis.... 625

W. Z. HUTCHINSON, Flint, Mich.

Comb Honey

Is profitably produced only when several important factors are combined. First, we must have the right kind of bees. We all know that there is not only a vast difference between the different varieties, but also a variation in strains of the same variety. Just which are the best bees for producing comb honey, *why* they are best, and how to secure them, is told in one of the chapters of *ADVANCED BEE-CULTURE*.

When bees of the right kind have been secured, then comes the matter of using the right kind of hives, fixtures, sections, etc., to secure the best results with the least labor; and *ADVANCED BEE-CULTURE* has a chapter on "Hives and their Characteristics;" and another on "Sections and their Adjustment on the Hives."

Bees may gather large quantities of white honey, and be so managed as to put very little of it in the sections; or they may be so managed that nearly all of it will go into the sections; all of which is explained in one of the chapters of *ADVANCED BEE-CULTURE*.

Comb foundation costs money. Notwithstanding this, its use is very profitable at some times and in some places. Under other conditions it worse than wasted. Read *ADVANCED BEE-CULTURE* and learn *why*.

ADVANCED BEE-CULTURE is a book of 32 chapters, describing the most advanced methods of bee-keeping from the beginning of the year through the entire season.

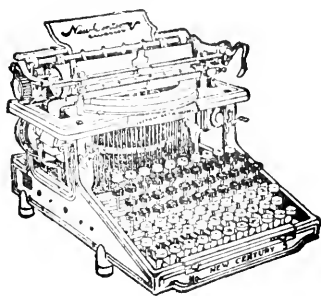
Fifty cents is the price of the book; or it and the *REVIEW* for one year will be sent for \$1.25.

W. Z. HUTCHINSON, Flint, Mich.

The *New Century*

Caligraph

does the BEST WORK and lots of it
EASILY.



STRONG, THOROUGHLY BUILT,
Superior in results to any other.

Write for
"The BOOK of the NEW CENTURY."

AMERICAN WRITING MACHINE CO.

343 Broadway, N. Y.

DETROIT SALES OFFICE, 819-821 MAJESTIC BLDG.

Standard Italian Queens

Of the Very Highest Grade.

Bred in separate yards from superior stock of Golden and Leather colored strains selected from among the best stock of long tongue clover queens in America, bred by us with the greatest care for business. No disease of and kind among our bees. Our high elevated country with its pure mountain air and sparkling water, and temperate climate, furnishes the ideal place of health for bees and man. See our circular for a fuller description.

Queens sent out last season arrived in the very best shape, except a few were chilled in cold weather. Our queens have gone to California, Canada, Cuba, New Mexico and many of the States. We rear all queens sent out by us from the egg or just hatched larvae in full colonies. Our method is up to date. If you want to know what we have or what we can do in the way of fine large queens; just give us a trial order. Shipping season from April 1. to Nov. 1.

Untested queens \$1.00, six for \$5.00, \$9.00 per dozen. Tested queens, \$2.00; select tested, \$3.00; best \$5.00. Full colonies, in light shipping case, tested queen, \$6.00. Three-frame nucleus, wired Hoffman frame, no queen, \$2.00; two-frame nucleus, \$1.50. Add price of queen wanted to the above. Special rates on queens from 50 to 500. Write for circular please, it is free. 4-03-11

T. S. HALL, - - - Jasper, Ga.

Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-26, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. They have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902.

Mr. Atchley, Sir:—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 140 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm each stored 28 pounds of honey; so you see I have 11 colonies from one, and 56 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen or heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 56 pounds of honey. If any of you scientific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I want no better. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3- and 5-banded Italians, Cyrians, Albinoes, Holylands and Carniolans, bled in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$6.00 per doz. All other months, 75c each, \$4.25 for six, or \$8.00 per doz. Tested queen of either race, from \$1.50 to \$3.00 each. Breeders from \$3.50 to \$10.00 each. 1-2- and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY
P. O. Box 79, Beeville, Bee Co., Texas

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co.
Sheboygan, Wis.

Please mention the Review.

MILLER QUEENS

Something worth trying.
Blood and rearing of the best.
Warranted queens \$1.00 each,
or six for \$5.00.

Lawrence C. Miller,

5-03-4t Box 1113, PROVIDENCE, R. I.

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

W. Z. HUTCHINSON, FLINT, MICH.

President.

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J. M. HAMBAUGH, Escondido, Cal.

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C. C. MILLER, Marengo, Ills.

Tested Queens.

I have a number of fine tested Italian queens raised last year from J. P. Moore stock, crossed with the best of my own stock, which I will sell for \$1.25 each; selected, \$1.50 each. I have only a limited number, and those ordering first will secure them. Queens will be shipped in June, as soon as I can raise other queens to replace them. Safe arrival guaranteed. A few good colonies of Italian bees in 8-frame Simplicity hives for sale at \$5.00 each.

ELMER HUTCHINSON,
5-03-1t Vassar, Mich.

The Choicest of Tested Queens

By return mail, \$1.00 each.

Three-banded Italians, from the best imported and home-bred mothers. Every bee-keeper knows that these are the best best honey gatherers. If you want strong colonies and full supers, try our queens, you will not be disappointed. Safe arrival and satisfaction guaranteed. Tested queens \$1.00 each, untested, 75 cents, \$8.00 per dozen.

J. W. K. SHAW & CO.
5-03-4t Loreauville, La.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross
Shipped from New York or from factory.

Send for catalogue to

J. H. M. COOK, 62 Cortland St., N. Y. City.

Please mention the Review.

Good Queens at Low Prices.

If it is queens you want, why, send direct to the NEW CENTURY QUEEN REARING CO., and get a queen any day, of any race, fresh from the moulds. Untested, of any race, 50c each; 3- and 5-banded Italians, tested, 75c each, all other races, \$1.00. We have an entirely new system by which we rear queens, which explains why we can offer them at such low prices. Send for circular.

NEW CENTURY QUEEN REARING CO.,

2-03-1f

Berclair, Texas.

Please mention the Review.

SAY, ALL BEE KEEPERS,

ONE QUESTION, PLEASE.

If you were offered a hive that would save you one-half of your time and labor in its manipulations, one that would save you more than \$1.00 per hive in the cost of extras; or a double-wall hive for the price of a single-wall hive, would you not investigate its claims or merits?

The 20th Century Ideal Does All the Above.

Then why not be on time, and send for circulars today? See the Review for February, page 48 (excuse errors on that page) and 60. Book and hive are two of the grandest "hits" of the age. Order the book *now*. Price 25 cents, and your money back if you are not satisfied.

T. K. MASSIE

2-03-4f

Tophet, W. Va.

We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest

Send for Catalog



Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

MICHIGAN

We are Jobbers of Bee-keepers' supplies in this State, representing

The G. B. Lewis Co., and Dadant & Son,

—WHOLESALE AND RETAIL.—

Several carload on hand.
Send for 40-page catalog.

Lewis C. and A. G. Woodman, Grand Rapids,
Michigan.

Tennessee Queens



Daughters of Select Imported Italians Select long-tongued (Moore's), and select, Straight 5-band Queens, bred $3\frac{1}{2}$ miles apart, and mated to select drones. No bees owned within $2\frac{1}{2}$ miles; none impure within 3, and but few within 5 miles. No disease. 30 years' experience. Warranted queens 75c each; tested, \$1.50 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

The Largest Yield.

I have had 30 years' experience as a queen breeder, and bees from my red clover, Italian queens have gathered the largest amount of honey ever gathered in one season by a single colony. Queen mothers a specialty. I also breed fine Rose Comb Buff Leghorn Fowls (original). Circular free.

F. BOOMHOWER,

4-03-11

Gallupville, N. Y.

Victor's Superior Italians

Go by Return Mail, and are Guaranteed to Give Satisfaction, or Money Refunded.

I am ready with the same old true and tried stock of Italian queens and bees as of old. My queen-mothers in yards No. 1 and 2 are serving their fourth year in that capacity, 1900-1903. Their daughters have pleased The A. I. Root Co., W. Z. Hutchinson, O. L. Heishiser, G. M. Doolittle, R. F. Holtermann, F. B. Simpson and many others prominent in apiculture. In fact, every customer has been pleased as far as I have heard. I COULD FURNISH HUNDREDS OF THE VERY STRONGEST TESTIMONIALS, but space forbids. Practically all the queens that I have sent from these yards were daughters and grand-daughters of the two "Old Wells," as we often call them. Untested queens, \$1.00 each; select untested, \$1.25 each; tested, \$2.00; breeders, \$3.00 to \$7.00. Send for illustrated price list.

W. O. VICTOR, QUEEN SPECIALIST WHARTON, TEXAS

Bee-Keepers

It is a conceded fact that the bulk of the honey of the future is going to be produced in the irrigated portion of what is known as "Arid America." If you are interested in the progress of apiculture in this vast region, you should subscribe for the

Rocky Mountain

Bee Journal,

a twenty-page monthly; price 50 cents per year.

This is now the only bee publication west of the Missouri river. We have several hundred eastern subscribers, and have still room for more. Write for free sample copy. Address

H. G. Morehouse
Boulder, Colo.

ROOT'S GOODS

At Root's Prices

Pouder's

Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

WALTER S. POWDER

512 Mass. Ave.

INDIANAPOLIS IND.

STANDARD BRED QUEENS

Buckeye Strain Red Clover Queens, make their mark as honey gatherers; they roll in honey while the ordinary starve. Be convinced of their wonderful merit by a trial.

Muth's Strain Golden Italians are wonders; they are the best in the land.

Carniolans, no one has better. We never figure the cost, when we purchase breeders. Our aim is quality and our patrons get the result. Large reserve for early orders. Ready to mail when weather permits; safe arrival guaranteed.

Untested, \$1.00 each, six for \$5.00
Select untested 1.25 each, six for 6.00
Tested 2.00 each, six for 10.00
Select tested 3.00 each, six for 15.00
Best money can buy, \$5.00 each.

Send for catalog of bee supplies, and see special inducements

The Fred W. Muth Co.

Front and Walnut

CINCINNATI, OHIO

Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, be cause it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation
for cash

a specialty. BEESWAX ALWAYS
WANTED at highest prices. Catalog
giving

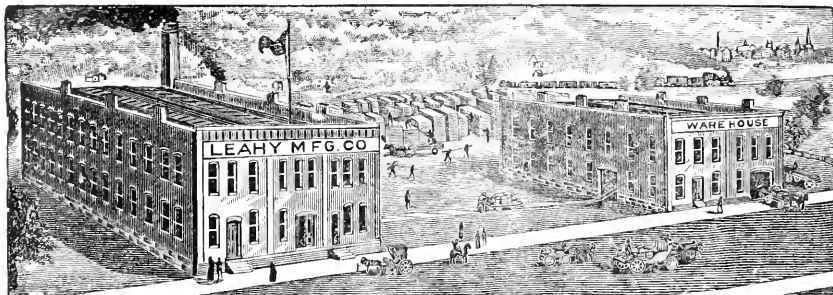
Full Line of Supplies

with prices and samples, free upon
application. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinued separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price; only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of *Sections*—polished on both sides. Satisfaction guaranteed on a full line of *Supplies*. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,

JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

Do You See This?

Have you ever solved the problem "what is the *best* all-round household remedy?"

I have carefully studied this problem during 18 years of general practice and think I have solved it. I believe, and my customers do, that there really is no other remedy so generally useful, or that gives such uniform satisfaction as

YELLOWZONES

Beats all how my customers *stay by me* year after year; many most prominent bee men, including Pres., Sec., Gen. Mgr. and Treas. of N. B. K. A. and many members, are among my regular customers—have been for years, and *you know they wouldn't be if Yellowzones were not "Select Tested."* I shall be glad to serve you also.

If you keep but one Remedy in the house it should be **YELLOWZONES.**

\$1.00 per box; Trial size 25 cents

Sample on request.

Your money back and **Another Box** if not satisfied.

W. B. House, De Tour, Mich.

WANTED.

An experienced bee keeper, to establish and take charge of commercial apiary on a plantation in Mexico. When writing, state terms of employment desired, and send references.

W. H. VERITY,
303 Fullerton Bldg., St. Louis, Mo.

\$QUEENS - \$BEES - NOW.

A. J. SWINSON, Queen Breeder, furnishes best to be had in U. S. **First-handed** warranted queens, \$1.00. Tested \$1.50. Breeders, \$5 to \$10. **American Albino Italians**, and **Adels** mated to **Albinos**.

SWINSON & BOARDMAN,
Box 358, Macon, Ga.

Please mention the Review

THE

A. I. ROOT CO., 10 VINE ST., PHILADELPHIA, PA BEE-SUPPLIES.

Direct steamboat and railroad lines to all points. We want to save you freight.

Please mention the Review.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Back Numbers

Of the Review needed to complete our file are as follows: Jan. 1889; Jan. 1890; March, August 1891; Feb. 1893; Sept., Nov. 1898; May, Sept. 1899; Feb., Nov., Dec. 1900. Any one having any of these issues that they are willing to dispose of will please address **WILMON NEWELL,** College Station, Tex. 2-03-61

Please mention the Review.

Superior Stock.



If the advertising that I have been doing the past three years has not convinced you that the Superior Stock that I have been offering for sale is really superior, then it is the fault of the advertising, for the stock is really all that I claim for it. I have guaranteed safe arrival, safe introduction, purity of mating, and satisfaction to the extent that a queen may be returned inside of two years, and the money will be refunded, together with 50 cts. to pay for the trouble. No other breeder makes any such guarantee. I have sold hundreds of queens under it. I do not know of a single dissatisfied customer, while I have dozens of letters from men telling of increased results from the introduction of this stock, and asking: "Can I get any more queens of you like the one I bought two years ago?"

Although the price of these queens is \$1.50 each, I have never been able to keep up with the orders. Most of my customers wait until spring before sending in their orders, and then have to wait from four to eight weeks. A few are far-sighted enough to send in their orders in the fall or winter, and these get their queens in May or June, in time to be of some service to them the same year. Send \$1.50 now and I'll book your order, and you will get your queen early in the season.

The price of a queen alone is \$1.50, but I sell one queen and the Review one year for only \$2.00. When you send in your renewal to the Review, send another \$1.00 (\$2.00 in all) and your subscription will be put ahead on year and your order booked for a queen.

W. Z. Hutchinson, Flint, Mich.

Queens

Golden and Leather colored Italian, warranted to give satisfaction. Those are the kind reared by QUIRIN THE QUEEN BREEDER. Our business was established in 1888. Our stock originated from the best and highest priced long tongued, red clover breeders in the U. S. We rear as many and perhaps more queens than any other breeder in the North. Price of queens before July 1st, Large select, \$1.00, six for \$5.00; tested stock, \$1.00, six for \$5.00; select tested, \$2.00 each; Breeders, \$3.00. Two-frame nuclei, (no queen), \$2.50. Special low price on queens in lots of 25 to 100. All queens are mailed promptly, as we keep from 300 to 500 on hand ready to mail. We guarantee safe delivery to any State, Continental Island, or European Country. Our circular will interest you. It is free. Address all orders to

QUIRIN THE QUEEN BREEDER,

5-03-06

Parkertown, Ohio.

HEDDON CASES.

I have over 100 of the Heddon, old-style section cases, that are well-made and painted, have been well cared for, and are practically as good as new that I offer at 15 cts. each

W. Z. HUTCHINSON, Flint, Mich.

—If you are going to—

BUY A BUZZ-SAW,

write to the editor of the REVIEW. I have a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Please mention the Review.

Power Saws and Axes.

Bee-keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

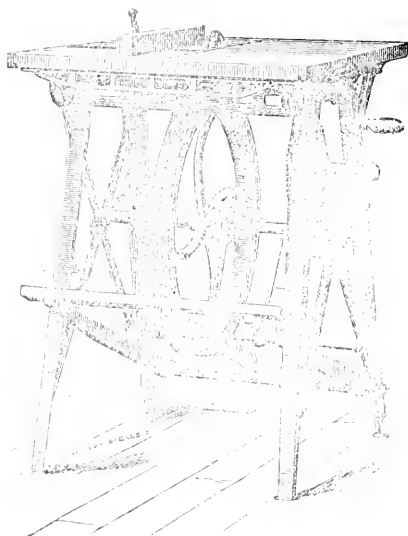
Machines on trial. Send for Catalogue.

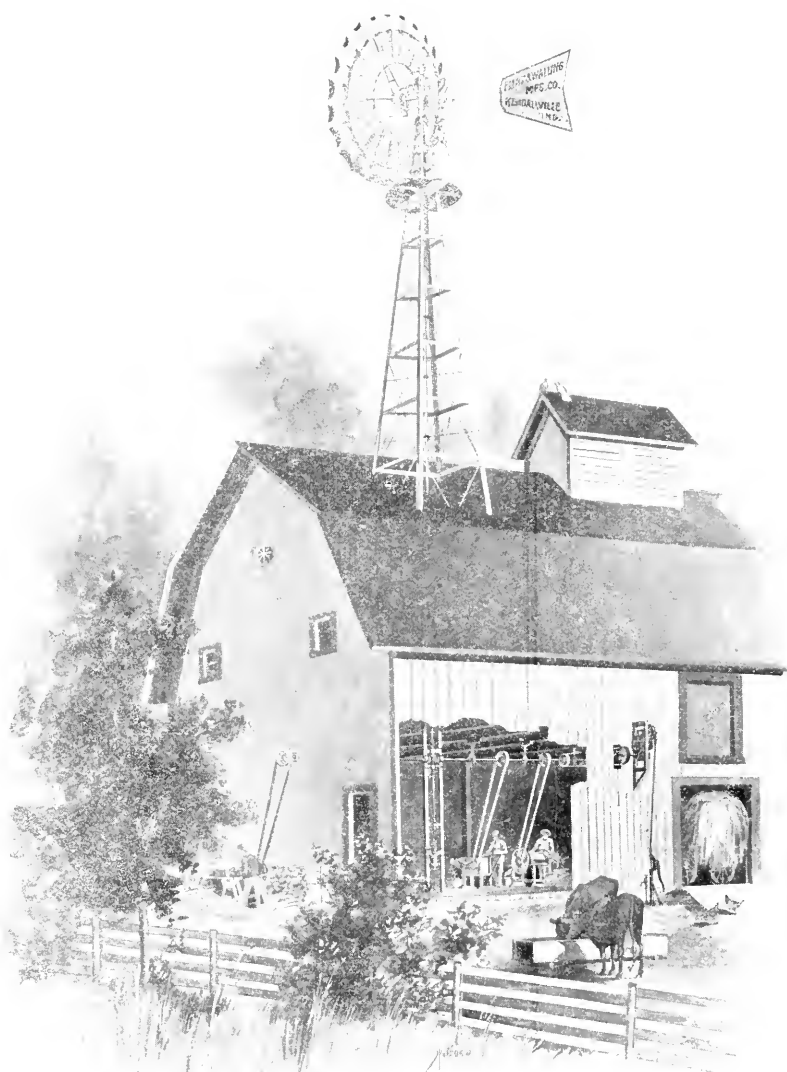
W. F. & J. O. BARNES CO.,

384 Roby St.,

Rockford, Ills.

7-92 241





WIND POWER FOR HIVE-MAKING AND FARM WORK.

Courtesy of Flint & Walling Mfg. Co.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

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W. Z. HUTCHINSON, Editor and Proprietor.

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WIND-POWER THE CHEAPEST FOR HIVE-MAKING. BY F. D. BLOSS.

Friend Hutchinson: In reply to your queries regarding my wind power mill, I would say that it is a steel, Star, Power Mill, with a 12 foot wheel. It is made by the Elm & Walling Mfg. Co., Kendallville, Ind.

In regard to the cost I shall have to give you a list of the articles and what they cost, in a lump sum, as I cannot remember what each article cost. Here are the items: 30 foot gas pipe, house-tank, barn-tank, 20 foot line shafting, six pulleys, pump, two-way corn sheller, grinder, 74 feet four-inch belting, 50-foot steel derrick and mill, all cost \$129. I put up the shafting and pulleys myself; put a hopper above the grinder, one below the corn sheller, and made an elevator to elevate the corn to the hopper above the mill.

I have also made a saw table, bought a saw and other that will allow me to use different attachments for making boxes. One feature, I have a cutter for use in making wide frames for use in the supers. I can

also put on an emery wheel for grinding plow points or running saws. I could also rig a turning lathe with this same motor. With a good, fair wind I can manufacture bee hives as fast as I could with steam power, as the mill gives from one-half to three horsepower, according to the wind.

This mill is just as good for pumping as any mill, and will pump with the lightest breeze. With an ordinary wind I can shell corn as fast as I can get it into the sheller; and, with a good wind I can elevate and grind the corn at the same time. I can grind from five to ten bushels an hour, according to the wind. I grind all of my own feed and some of my neighbors, and make my own graham flour and corn meal. When there is a good wind I can make the finest graham flour by running the wheat twice through the mill.

I consider a wind mill a very cheap power if run on a farm. Besides doing what I have mentioned, it will cut feed for stock, and saw firewood. All the consens there is, is for a little oil. The only drawback is that a man must remember to use his machinery when the wind blows. I bought my mill six years ago. It was the first

Star mill brought into this county, and now I can count twelve within a few miles of my place.

Swartz Creek, Mich., May 5, 1903.



**WHYS AND WHEREFORES
SHOULD RECEIVE
MORE ATTENTION. BY
ARTHUR C. MILLER.**

Friend Hutchinson: Your letter of the 11th inst. was duly received. Your efforts for real progress in apiculture are worthy of more earnest support than you receive. It is decidedly an uphill and almost thankless task. Bee-keepers have for so long been served with articles on manipulation, with so little regard to the whys, that they will not listen to anything else. Not that all are so, but such a large majority are, that it is difficult to make headway against their stolidity. If you can get these people to see that the new line of treatment means more cash, then perhaps you can get and hold their attention.

Harder to combat than these, are the veterans whose prestige rests on manipulation—which they do not always follow—and, fearing loss of popularity, assent every move made by the newer school.

There are many little matters, discoveries of ways and methods of bee life, which have no direct bearing on the financial side of bee-keeping, and yet, which it is important that they be correctly stated, as reasoning regarding modes of procedure are often based on them. Misstatements, due to carelessness and ignorance, by men who because of their prominence should be doubly cautious, lead many astray and cast doubt on the work of real investigators.

A very glaring example of careless

statements is Dr. Gallup's concerning the so-called "umbilical cord," and Mr. Doolittle's endorsement of it. [I believe Mr. Doolittle says that he did not intend to fully endorse Mr. Gallup's views, but rather to convey the idea that if there was any virtue in this "missing link," then queens reared according to the plan given in "Scientific Queen-Rearing" possessed this virtue.—Ed. Review.] A reference to Cowan's "Honey Bee," Cheshire's "Bees, Etc., Scientific" or any work on the origin and metamorphosis of insects, will soon satisfy any student as to what the "cord" really is.

But what can you expect of others when you write of "bees caressing the queen and offering her food when she pokes her tongue from the partly opened cell." That surely is a relic of the dark ages. The tongue is probably put out as a "feeler," for it is often used thus. Bees never offer food to the queen, or to each other, it always has to be asked for, and, sometimes, almost taken by force. From long observation I am satisfied that it is never given on or by the tongue of the "giver," but is taken from the mouth of the "giver" by the tongue of the taker. When a queen is free to roam at will she can get such food as she needs, but, shut up and dependent on "eaters," she stands a slim chance. It is not the worry of confinement which kills queens, but starvation.

A seemingly small matter, but of large importance, is the faeces of bees, are they fluid or dry? The textbooks say fluid, and Prof. Cook says that bees, when unable to fly out and void their faeces, are compelled to do so in the hive, thus soiling combs, etc. When diseased this is so, but, when healthy, bees void dry faeces. I have often seen them do this and have gathered such matter from the bottom

boards for examination. Furthermore, excess of pollen is constipating. Bee dysentery is due to some other cause than eating pollen, or inability to fly out to discharge contents of bowels. I believe it is due to watery, fermented, or unripe honey, or that which has absorbed much moisture. The trouble can occur without pollen; the latter only serves to make its results more visible. It is so many years since my bees have shown the slightest sign of any such ill, that I have ceased to give it much study.

Tight sealing, air and moisture tight, and no ventilation but the entrance, is my practice in wintering. The tarred paper wrapping is fine, and the principle of a wind and water-proof covering of black deserves wider use. It most effectively disproves Mr. Doolittle's contention for porous unpainted hives. By the way, his idea of a well-painted hive was given in one of his articles, and explained his attitude. It was a hive which showed the chrome of the paint, "after many years," but the oil, the water-resisting part, was all gone. Such wood will absorb and hold water, as he says, but live paint, that with the oil still in it, keeps the rain out. Many, many times as much water falls on the outside of a hive as could be put inside of it. If you will look into the whys of it, you will see the error of his theories.

Do not depend too implicitly on the textbooks. If you will delve in those of past ages, you will, on comparison with our modern ones, find many sacred mummies which have been passed down unchallenged and unaltered.

To write this way for publication is unwise, if popularity is desired, but it does serve to stir antagonists to trying to disprove one's assertions. In order to make satisfactory and con-

vincing answer, they must needs go to the bee and learn of her, and then—well, then they are compelled to change their minds or stultify themselves.

Set your readers to looking for the whys and when these are determined we may proceed to profitable discussions as to methods, but not before.

Providence, R. I., Feb. 16, 1903.



HOW TO REAR GOOD QUEENS IN AN EASY, SIMPLE WAY. BY G. W. McGUIRE.

Perhaps nothing in the whole apicultural industry is more important than the rearing of good queens. As our success is hinged largely upon the quality of our queens, it is highly important that we investigate the conditions under which good queens are reared. In the first place, the queen or mother from which we desire to breed, should be in a prosperous condition and in the prime of life. I don't believe the egg of a discouraged, half-starved queen can be made to produce as good a queen as an egg from the thrifty, well-fed queen. In the next place, we want our cells all started by queenless bees; as bees must feel and realize the need of a queen before putting their whole energy, soul and strength in the work of rearing a new mother.

In the early spring I select the colony having the queen from which I wish to breed, and place at one side a division-board-feeder, with a plain division-board at the other side, and see to it that they have plenty of honey. When the time arrives that I wish to rear a batch of queens, I go to this select hive, about sundown, and fill up the feeder, take out the division-board, and place a sheet of brood foundation in the center of the

hive. The feed will have a stimulative effect upon the queen, and cause her to at once fill the sheet of foundation with eggs. I allow this sheet to remain three days and a half, when there will be just hatched larvae in the center. I now take a strong colony of blacks (as I find blacks to be the best cell builders), find the queen, and remove her with a frame of brood and bees to a nucleus. I now shake all the bees into a new hive with empty combs, and place on the old stand. The combs of brood are placed over a strong colony, with a queen-excluding honey-board below them. This upper story will be the very best possible place for having the cells completed.

I now go to the breeding queen, take out the comb of young larvae and cut into strips about 10 inches long. I have a Langstroth frame prepared with two horizontal bars, lay the edge of a strip to the center of the wood bar, and, with a stiff table knife, rub it hard against the wood, give it a quarter turn, and it will be true in the frame. I destroy the larvae in each alternate cell, and then hang the frame in the queenless hive, the bees of which are literally crying for a queen.

The result will be that each prepared cell will be royally fed from the very start. If honey is not coming in freely, I feed a thin syrup; as plenty too eat is one of the essentials of good queen rearing.

After 24 or 36 hours I remove the cell-frame to the upper story of a powerful colony, placing it between two frames of unscaled brood with a queen excluder between the two stories, and the cell finishing goes merrily on.

We can now give another frame of brood to the queenless bees, thus keeping each department of the work moving in rotation.

On the twelfth day (not later) the cells in the upper story should be cut out. I do this with the small blade of a pocket knife.

But before doing this, we must have our nuclei ready. I prepare my nucleus hives large enough to admit two frames and a feeder. About sundown I arrange my little nucleus hives, and at once begin to people them with one frame of hatching brood and one of honey with all the adhering bees; being careful not to get the queen. I screen them in till the next evening, keeping them shaded well if the weather is hot.

I insert a cell in each nucleus, point down, between the two combs, and the queen should hatch in from 6 to 12 hours if everything has worked well.

The young queens, if the flow is good and the weather fine, will mate and lay in from five to seven days. Should the weather be indifferent, and honey scarce, they will not mate so soon.

However, if orders for queens are coming in, and your virgins seem in no hurry to mate, fill the division-board-feeders with thin, warm, sugar syrup. Do this about 10 o'clock in the morning of some clear day. Don't feed honey, as it will induce robbers. This feed works like a charm, and the queens at once leave in search of a sweetheart, are quickly mated, begin promptly to lay, and are ready to send to your customer.

When you take a queen from a nucleus, it should be at once supplied with a ripe cell. I hear some one say: "Give a Virgin queen." This may do if she is very young, but after twelve hours the introduction is anything but pleasant. I believe Alley does it by means of tobacco smoke, but the cell-method is far the surest.

Dark Ridge, N. C., April 1, 1900.

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

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Flint, Michigan, June 10, 1903

The Southland Queen is on deck again, and is the same old Queen as of yore.

A Little Child does not fear its happiness to pieces to see what it is made of; and we older, philosophizing, moralizing mortals might have more fun by being more childlike.

Mr. Wm. A. Selser, of Philadelphia, Pa., has been appointed by the Executive Committee of the National, to succeed the late Thomas G. Newman, as member of the Board of Directors.

Fumigating of section honey was found necessary by Dr. Miller years ago, when his bees were mostly blacks, but now that they are mostly Italians, the necessity for fumigating has disappeared.

Mr. Udo Toepperwein, of San Antonio, Tex., has been appointed by the

Executive Committee of the National, to succeed Mr. A. I. Root, as member of the Board of Directors. Mr. Root resigned recently.

The Busiest man that you can find is the one to employ if you wish a job done quickly. The man of leisure does things leisurely. The busy man has learned to hustle; and he "gets there" before the man of leisure gets through thinking about it.

"No doubt more money could be made at bee-keeping if everything in the business were fully settled and we knew beforehand just exactly the right step to take in any given case, but there wouldn't be nearly the fun in it."—Dr. Miller in his new book.

As a brush for removing the bees from a comb, Dr. Miller knows of nothing better than one made of some growing plant, such as asparagus, sweet clover, goldenrod, or aster. No little bit of a thing, but a good, big bunch, well tied together with a string.

The Cover of a bee hive is a most important feature, and I agree most heartily with Dr. Miller when he says: "I would rather pay a good price for a good cover, rain-proof, bee-proof, non-warpage, non-twisting, with a dead-air space, than to take a poor cover as a gift."

Dr. Miller has changed from one style of hive to another so often, and "don't know," but he may keep up the

practice, that he saves some expense by not painting the hives. Besides, he is afraid that bees don't do quite so well in painted hives. Mr. Doolittle holds the same belief.

Homer H. Hyde and Lizzie E. Adams, of Floresville, Texas, are to be married June 18th. The editor of the Review has been invited to be present at the ceremony. He regrets his inability to accept the invitation, but extends his heartiest congratulations and best wishes.

Dr. J. L. Gandy, of Humboldt, Nebraska, has sold a carload of bees to go to the famous Watson ranch of Kearney, Nebraska. Roy Wilson will have the management of the bees. The Humboldt paper says that twelve men worked all night preparing the bees for shipment, and some of them "bore marks of their labor" the next day.

General Manager France writes me that he has city bee-keeping as a nuisance to look after at the following places: Sparta, Michigan; Central Lake, Michigan; Little Britain, Ontario; Riverside, California; Lake View, California; Aurora, Illinois; Woodstown, N. J.; and Mesa, Arizona. There is also a claim of adulteration to look after at Denver, Colorado.

Mr. John Nebel, senior member of the firm of John Nebel & Son, of High Hill, Missouri, passed away May 5th, in his 70th year. I remember meeting Mr. Nebel, I think it was at the World's Fair, when he seemed hale and hearty and well preserved. One by one the old bee-keepers are dropping away, and it seems as though

they had been dropping unusually fast during the last few months.

Division boards were once thought quite necessary in packing up and protecting weak colonies in the spring, but Dr. Miller calls attention in his book to the experiments of Gaston Bonnier, showing that combs serve as good a purpose as division boards, thus there is no necessity of putting in a division board and moving it from time to time to accommodate the size of the colony.

Robber-bees, as all experienced beekeepers know, are loth to enter a long or obscure passage way. Mr. R. J. Stead, of Lanark, Ontario, secures such a passage by laying two bricks in front of the entrance, close against the front of the hive, and shoving the bricks so close together that only one or two bees can pass at a time. On top of these two bricks he now lays a third that covers the passageway overhead. Robbers are thus confronted with a sort of tunnel which they are slow about entering.

Out-door feeding is objected to by Dr. Miller on the ground that we may thereby feed our neighbor's bees as well as our own; besides, the colonies that are most in need of the feed may get the least. Stimulative feeding in the spring does not receive much encouragement at the hands of the Doctor, and I think he utters a most important truth when he says: "If a colony comes out of the cellar strong, and with combs full of stores, I have some doubts if I can hurry its building up by any tinkering I can do."

Mr. Jacob Alpaugh, whose home is in Ontario, writes me that in the pro-

duction of comb honey, he has practiced shook swarming for several years, and that he expects to continue it until he finds something better. He says one drawback is the tendency to swarm out. In the production of extracted honey he thinks there are better methods. For instance, he puts two or three supers full of empty combs on each hive, raises two or three combs of brood from the brood nest at the time of putting on the supers, sees to it that the bees are shaded and not crowded for room, and there is little use for the shake out plan.

The Texas Bee-Keepers' Association will meet in annual convention at the Agricultural and Mechanical College, at College Station, Texas, July 7-10, inclusive. This will be during the meeting of the Texas Farmers' Congress, when cheap excursion rates bring large crowds every year, who have a jolly time as well as the experience and knowledge gained at these meetings.

Exhibits are made of all kinds of products, and many premiums are awarded. Come and bring what you have. You're invited. Be there, and have a good time, too.

Remember College Station, Texas, July 7-10, 1903.

LOUIS H. SCHOLL,

Hunter, Texas. Secretary.

Kerosene oil, or coal oil, as it is called in some localities, may be successfully used to cleanse the hands from propolis, says Mr. A. J. Kilgore, of Bowling Green, Ohio. He puts it on his hands, rubs them well, and then wipes it off on a piece of paper or some old cloth. He then washes his hands with soap and water. I know that kerosene oil is excellent for removing paint, tar, pitch, wax, etc.

and I presume it would remove propolis, but it is not so pleasant to use as the Lava soap.

Smoker Fuel is always a "burning" subject for discussion. Dr. Miller, in his book: "Forty Years Among the Bees," after mentioning pine needles, rotten wood, sound wood, excelsior, planer shavings, greasy cotton-waste, peat, rags, corn-cobs, old bags, etc., says: "And yet there are times when something green is better. When a continuous and strong smoke is wanted, after a hot fire has been started in the smoker, it is a good thing to fill the smoker with green sticks from a growing tree. The hot fire and the continuous blowing makes it burn freely, and the smoke from green wood is sharper than that from dry."

Kodak-work, as a rule, (mind, I say, as a rule) is not very good, but somebody should have some praise for the work done with a kodak, the results of which appear in Dr. Miller's new book. While I would not like to say that better work could not be done, I would also like to say that it is good; especially considering that the doctor makes no pretensions of being "up" in photography. The doctor "pressed the button," and, in his preface, very fairly gives credit for the developing and toning to the Eastman Kodak Co., of Rochester, N. Y. This shows what specialty can accomplish. But I must say, that, for a novice, the doctor does excellent work pressing the button.

The Extra Touch is often what brings success. It was a little thing that impressed this upon my mind recently. A young man was shining up my shoes in a barber shop in Grand Rapids. After he had apparently com-

pleted the job, he fished out a bottle containing a liquid blacking, and with a swab, blacked the edges of the soles, including the heels. This blacking resembled that used by shoemakers for blacking the edges of the soles when they are making boots or shoes. After putting on this blacking, the young man polished the edges of the soles. Usually, the edges of the soles receive scant attention from the bootblack, perhaps a little dab of the ordinary blacking, but this man not only did an extra fine job, but put on this extra touch. It was a small thing for me to notice, but it set me to thinking. If I had occasion to patronize the boot-blacks of Grand Rapids, this man would get my trade, if it was convenient for me to give it to him.

What is true of bootblacks, in this respect, is true of other things. It is the extra, or finishing touch, that secures and holds customers. After you have done as well as anybody does, then keep on and do a little better, and it is in this extra touch that lies the profit. A man only a trifle above the ordinary in height, is very noticeable in a crowd, so a piece of merchandise, or a job of work, only a trifle better than the ordinary attracts and holds customers.



HOW TO KEEP ON A SMOKER COVER.

O. H. Townsend, of Otsego, Mich., gives the following instructions for making a smoker top stay on:

When a smoker top gets slippery, so it will not stick on, do not crowd it down too hard, thus making it loose and worse than before, but just press the edge of the slippery top in to the ground, and the grit in the soil will adhere to it so that it will stay on. Very simple, isn't it? but I used smokers for a long time before I thought of this remedy, and it may be

that some one else among beginners has not thought of this way to keep the top on.

If the smoker top is hinged, and bothers, I would dispense with the hinge.

I suppose that perfectly dry fuel is also a remedy, but mine don't always stay so dry.



INTRODUCING YOUNG QUEENS TO PREVENT SWARMING.

Dr. Miller, in his new book, says it has been said that colonies supplied with queens of the current year would not swarm, and that he tried supplying all of his colonies with young queens, but it didn't work. The bees swarmed. The doctor then goes on to say that he once removed a queen from a colony that had swarmed (and the swarm had returned to its hive) and gave it a queen that had not been laying more than three days, yet within three days the queen came out with a swarm.

All of the foregoing I can most readily believe. In fact, it is exactly what I should expect. But I fear that my good friend has not quite understood this matter of giving young queens to prevent swarming. Or, rather, he has overlooked one factor. Year after year have I proved the truthfulness of the theory that the giving of a young queen before the swarming fever has developed, will prevent swarming. Each year for a number of years, I used to sell all of my queens early in the spring, just as early as I could get young queens from the South to replace them, and only once did I have a colony swarm that was given a young queen early in the spring, and, in that case, the queen was imperfect. I do not suppose that this plan is practicable with the ordinary bee-keeper. I could not, or

should not, have followed it had it not been that I was in the queen trade, and advertised these old queens and sold them. There was nothing unfair about it. I offered them for exactly what they were—tested queens of the previous year's rearing. I sold them at the same price as a young, untested queen, so that I might be sure of their being bought early enough in the season.

BOTTOM BOARDS AND COVERS FASTENED ON WITH DOUBLE POINTED TACKS.

In moving bees it is necessary to fasten on the bottom boards and covers, and many plans have been devised. Probably nothing is more simple than the one mention by E. R. Root in *Gleanings* for May 15th. It is that of using double-pointed tacks, one prong of a tack being driven into the bottom board, or cover, and the other into the hive-body. A tack at each corner of the hive will hold on the bottom board, or the cover, and they can be very easily pried out with a screw-driver. These double-pointed tacks, or crate-staples, are about $1\frac{1}{2}$ inches wide with points $\frac{3}{4}$ of an inch in length.

E. R. Root suggests another point, that of slipping a piece of section-box under each corner of the hive-cover before fastening it on the hive. This leaves $\frac{1}{8}$ of an inch crack all around the hive, just under the cover. With wire cloth at the entrance, Mr. Root thinks this would be sufficient ventilation, even on a hot day, if the bees were not to be moved more than two or three miles. He recommends that the moving be done in the morning or evening. Unless the weather was cool, or the colonies weak, I should fear that this would not be sufficient ventilation. I know I moved an apiary once in the cool weather of the fall,

and scarcely a bee left the combs. This whole matter of moving bees, and the ventilation necessary, is one requiring the exercise of some judgment. I have no doubt that there are many times when a crack of this kind around under the cover, would be sufficient, and we would be saved the trouble and expense of putting on wire cloth.

ONE THOUSAND DOLLARS APPROPRIATED FOR THE USE OF THE ILLINOIS BEE-KEEPERS' ASSOCIATION.

The Illinois Legislature has appropriated \$1,000 for the use of the Illinois State Bee-Keepers' Association in "paying the expenses of the annual meetings, publishing the proceedings of said meetings, suppressing foul brood among bees in Illinois, etc." I have no doubt that the officers of the Association will use the money wisely. The only weak spot that I see, and it is possible that I do not yet thoroughly understand the matter, is in regard to the use of money in suppressing foul brood. Of course, the Association will have the power to use the money in paying the expenses of an Inspector, but I do not see that this law gives said Inspector any authority to examine apiaries should the owners object, or to destroy foul broody colonies when, in his opinion, it is wise to do so. In fact, one of the most useful attributes, if not the most useful, of an Inspector is his authority to suppress foul brood. Well informed bee-keepers seldom need the services of an Inspector in their own apiaries. They can recognize foul brood and know how to get rid of it. The trouble comes from the fact that foul brood may be in the surrounding apiaries of farmer-bee-keepers, who can not or will not recognize and get rid of the pestilence. It is here that the Inspector must step

in; and behind him must be the authority of the law with a penalty attached for a refusal to obey his instructions. The Inspector may never find it necessary to call the law to his aid, but the fact that he has it in his power to do so has a wonderful influence in leading people to listen to his arguments.

WIND POWER FOR HIVE MAKING AND FARM WORK.

I went over to Swartz Creek the other day to visit a bee-keeping specialist, Mr. F. D. Bloss, who has managed as many as three apiaries at one time. The thing that interested me as much as anything was his power windmill, arranged for pumping water, shelling corn, grinding feed, and running a saw for making hives. Any one, or all, of these machines may be run at one time. Each machine can be thrown into or out of gear independent of the others. The machinery, shafting, etc., were all fitted up by Mr. Bloss himself.

I had my camera with me and took a view of the interior, as well as of the mill and the handsome farm residence, but I could not get back far enough in the shop to get as good a view as I wished, and when I learned by correspondence with the makers of the mill, that they had a cut showing the whole general arrangement of a mill arranged for such work, I decided to use it as a frontispiece instead of the view that I had taken.

I asked Mr. Bloss to give some of the particulars regarding the cost and use of the mill, and these will be found in the first article for this month. For a farmer bee-keeper who has wood to saw, water to pump and feed to grind for stock, and bee-hives to make, I can think of no more desirable power than that of a good windmill.

EXTRACTED

TAKING COLD.

Exposure is not the Primary Cause.

Considering the great importance of health, and the almost impossibility of enjoying life, or accomplishing anything when sick or sickly, it is with difficulty that I have frequently refrained from allowing more than I have to appear in the Review on the subject. When a boy, if I had known what I now know, and had done as well as I knew how, I am satisfied that I need never have known a sick day. It is only within the last two or three years that I have learned that "taking cold," as we understand the term, is seldom the result of exposure. Years ago I was always so careful to bundle up well when I went out in the cold, careful not to stand in a draft, nor to go out of doors bare-headed, etc., yet I frequently had a cold, and was often puzzled to know how or when I could have "caught it," as I could not recall having exposed myself—sometimes I had "not even been out of the house." Now I know that these "colds" were the results of my improper methods of living. Since correcting them I am no more troubled with colds. This whole matter is so thoroughly, scientifically, and graphically explained by our old friend, Mr. T. B. Terry, he of potato fame, in an article in the Practical Farmer, that I take pleasure in copying it. It is well worth the perusal, and the advice given would lead to a great improvement in health. Mr. Terry says:

"All readers do not quite understand what has been said on this point, judging by letters received. I said exposure to cold is not the real or

primary cause of the condition known as a cold. I will try to explain more clearly. Suppose we had a gasoline stove in our house, and it should spring a leak. The escaping gasoline, changing into gas, mixes with the air. I know there is a leak there, but neglect it carelessly. By and by I come in; and wishing to light a lamp I strike a match. Instantly an explosion occurs that injures me considerably, to say nothing of the damage to the house. Now, what would you say was the cause of the explosion? Why, the leaking of gasoline. Not one of you would say, 'I think it came from lighting a match.' And still that was the secondary or incidental cause. The primary cause, which all would think of as the real one, was allowing that gasoline to escape into the room. And I doubt not many would say I deserved the injury received. I don't think one of you would advise me to avoid striking matches in the future, but rather to see that there was no gas that the match could ignite, and that would be good sense. Now, I am convinced that the real, primary, or first cause of so-called colds is invariably from within, and not from exposure to cold. It is over eating, breathing impure air, lack of exercise, lack of bathing, or something of this kind. The blood becomes overcharged with impurities. Nature tries to discharge these through the mucous membrane, usually in the head, because the proper channels are unequal to the task. The secondary or exciting or incidental cause of the cold, the last straw that brings the matter to a climax, may be a chill from exposure to cold. When the system is in the condition named above, the reactive powers will be weak, of course. But for this unhealthy condition, exposure to cold would do no harm. The climax may also be brought on by

eating when over-tired, or by overdoing in any line. Now, when you get a cold, and are asking how you came by it, why not be as sensible as when talking about the gasoline explosion? Why lay the blame in one case to the real cause and in the other to the secondary or exciting one? There is as much reason for saying Terry struck a match and it blew him up, as for saying you went out without any rubbers, and caught cold, or facing that wind yesterday or sitting near that window, which caused a little draft of air, gave you a hard cold. If you were all right internally, no trouble would come from any of these matters, any more than from my lighting a match when there was no gas around. In proof of this, why have you not always taken cold when exposed to cold air? Simply because your system was in a healthy condition when you did not. A person in vigorous health, with pure blood coursing through his body, would not be affected unfavorably in the slightest degree by these exposures to cold. Which is better—to remove the fundamental cause or leave it there and try to be very careful about any possible exposure that may bring on a climax? With this kind of care you are constantly making the body weaker and less resistful, and making yourself more and more a greenhouse plant. If you will pay reasonable attention to the plain laws of health, particularly to breathing fresh air, not overeating, and taking proper exercise, you may soon get in such good health that exposure to cold will not have any injurious effect. In fact, fresh cold air will act as a tonic, building up your vital powers still higher. To test this matter, last August, when the days were very warm and the nights cool, so my bedroom was so warm no covers were needed to make me comfortable at bedtime; but before

morning I was glad to draw a blanket over me. I lay down about a score of nights without anything whatever on or over me—not even a night shirt. About 2 a. m. I would waken and find myself nearly as cold as ice as the four large windows were wide open. Then I would cover up warmly and go to sleep again. No harm whatever came of it. I was cold, and got over it again—that was all. But my blood was not clogged with waste material. It was pure, and circulating properly, caused by attention to matters named above. Under these conditions I will wear an overcoat a few days, if I wish, and leave it off when an extra cold day comes. I will even go without my under-clothes any day in winter, or sit by an open window in a hall where a meeting is held, and let cold air blow directly on me, or do anything else that people generally think causes a cold, and no bad effects will follow. I have tried these things enough to know. But were I overeating—eating from habit when food was not strongly wanted and relished, and taking insufficient exercise, and breathing impure air largely, then I should not dare to take such chances. By the way, to get fresh air, the other night I got our Mr. Henry, who carries a screwdriver on purpose, to take off the outside storm-sash from my bedroom window. The glass was out of one-fourth of the inside window, and I was glad of it, although it was zero weather. My only fear was that they might put it in, as the sash stuck so it could not be raised; but they did not, and I breathed in good health nine or ten hours each night. I believe in these matters I advocate, good friends, and use them to keep in the best health."

In the magazine, *Physical Culture*, I ran across a statement, the other day, in which were given the things

to be observed in building up a healthy body. Here they are, in the order of their importance. Air, water, rest and relaxation, food, exercise, and bathing. Of course, each person must use judgment in the consideration of these points. While the breathing of pure air is of the first importance, yet to the man who lives out of doors most of the time, and who has plenty of pure air in his sleeping room, it is not the thing to which his attention must be directed. He already has plenty of that. Rest and relaxation may be the most important thing for him to heed, while the person who leads a quiet life, with little exercise, might find exercise of the first importance for him to consider, etc.

MOISTENING SECTIONS.

The Best way to do it Before Folding Them.

As a rule, it is necessary, or better, to dampen one-piece sections at the joints before folding them. It would not require the breaking of very many sections to counterbalance the time spent in moistening the joints, if the moistening is done in the right way. I know of no better plan than that given by Dr. Miller in his book, "Forty Years Among the Bees." Here is what the doctor says:

"If they are crated in such a way as to be favorable for it, the whole crate of 500 are wet before being taken from the original package, one side of the crate being removed so as to expose the edges of the sections. If the crate is not of the right kind for this, then the sections are taken from the crate and put in the proper position in an empty crate lying on one side with the top and one end removed. Of course the sections do not lie flat, but on their edges, the grooves

of each tier corresponding with the grooves of the other tiers, so that a small stream of water poured into the grooves at the top will readily find its way clear through to the bottom. If necessary the sections must be wedged together, so there will be no room for water to get between them only at the grooves.

A pint funnel is specially prepared for the work. A wooden plug is pushed in from above, projecting below two inches or less. The lower end of the plug is whittled to a point, and either by means of a bad fit or by means of a little channel cut in one side of the plug, there is just leak enough so that when the funnel is filled there will be a continuous fine stream of water running from the point of the plug. Holding the funnel in one hand I pour into it boiling water from a tea-kettle held in the other hand, at the same time holding the funnel so that the stream from the point of the plug shall be directed into the grooves, moving the funnel along just fast enough so that the water shall be sure to go clear through to the bottom. Cold water will not work well."

GENERAL MANAGER FRANCE.

Some Few of the Things that he is Doing.

Of course, Mr. France has been in office only a few months, and he has had many things to contend with, but he has taken hold of matters in a way that shows he means business, and is going to be the right man in the right place. I have had considerable correspondence with Mr. France, and I know some of the difficulties he has had to overcome, and something of the amount of work that he and his

family have had to put in, but, perhaps, he would not thank me for telling it, so I won't, but I will tell what Gleanings has to say about him and his work. It says:

"General Manager N. E. France is doing some hard work. He has before him now eight cases of bees under consideration. Two of these are for damages; two for poisoning by spraying fruit trees, and two of honey adulteration. He now has, or did have on May 5, 1202 names, nearly all of which are paid up. He has distributed 1,500 copies of *Bees and Horticulture* and has ordered 1,000 more. Mr. France, if we may judge by the work he is doing, will earn his salary and more too. The Association is to be congratulated on having such an excellent man for the position. While he is not saying very much he is keeping still and sawing wood. The membership should stand by him, and help him in every way possible. Our recent unpleasantness does not seem to interfere very much with the flourishing condition of the Association. This is as it should be.

Mr. France has always been known as a hard worker and a successful business man. He is carrying these characteristics right into the Association work, and of course that presages success."

USING STARTERS IN THE BROOD NEST.

How and why Starters can be Used to Advantage, and how to Prevent the Building of Drone Comb.

One of the most frequent objections brought against the practice of using starters only in the brood-frames when hiving a swarm, is that drone comb is sometimes built. Of course, there are always reasons for

this, and Mr. M. A. Gill, in an article in *Gleanings*, very clearly sets forth these reasons. He says:

"It is a fact patent to all, I think, that a colony that is building a set of combs in the brood-nest, and that has at the same time ample storage room in the super, has all desire to swarm removed, and the necessity for rapid comb-building for storage purposes removed, and that the desire for workers in such a colony is paramount. Hence nearly all the comb that is built by the bees, and immediately occupied by the queen, is built, worker size, whether the queen be one month old or three years old.

But to secure these conditions, everything must be normal. The colony must have a laying queen and an ample field force at the time they are lived, whether the swarm is forced or natural. Again, it is necessary to have a steady flow of honey; but these conditions nearly always prevail at such times in Colorado.

Any condition that will retard rapid comb-building, like an old queen with a good force of young bees and a small field force, or a colony that has been given a frame or two of brood to help them, and has a small field force, or a colony, let it be large or small, that is compelled to raise a queen, will invariably construct much drone comb.

But I think it is still safe and advisable, here in Colorado, where our swarming season does not stammer along through the year, as in oriental countries, but is nearly all done in twenty days after the honey-flow begins, to continue the use of starters only in the brood-nest; and our reward will be a good crop of the most beautiful surplus honey that can be raised, and brood-chambers filled, with none too much drone comb, as hundreds of my own and others' hives will attest."

PREVENTION OF SWARMING.

A Variation of the Shook and Transferring Process.

Mr. Geo. Rockenbach, in the *Progressive Bee-Keeper*, sets forth the advantages of the shook-swarming process over that of natural swarming, and then goes on to tell of a plan that he uses that he considers ahead of the shook swarming. Among other things he says:

"An ordinary bee-keeper that has been in the business for a number of years will tell you that when a colony gets to a certain strength, that is, after the white clover has been in blossom some 12 or 14 days, every colony that was in good condition will have one super half to three-fourths full. But now comes the critical condition. After said super is nearly full, the colony will begin to loaf for a week before it swarms, and this same week is lost if we wait for a natural swarm; henceforth, be wise and transfer when the super is half full. Some apiarists will tell you that every colony will act different from others. Nonsense. The bees must be controlled and made to do that which we wish a la Aikin. Providing you have the bees, and there is any nectar in the field, shook swarms will work with the same vim as the natural swarm, and doubling that of a loafing old colony with a lot of worthless brood after the flow is over.

My method is as follows: The colonies are grouped in pairs to begin with in the spring. Colonies No. 1 and No. 2 stand side by side. Spread them about 18 inches, and place a bottom-board with a Heddon half super or hive between the two hives, and place in it seven shallow frames with one-half inch starters. Now go to colony No. 1 and pry off the super, but

do not take the cover off the super. Use very little smoke; next find the queen and place her with the frame of brood she is on, in the newly formed hive, with three of the empty frames on one side and four on the other. Now take from the same colony two more frames that contain no brood and place one on each side of the empty frames and your brood chamber is complete. Place an empty super, containing only starters in the sections, on this newly formed colony. Take the cover off the other super and place the super on the empty super, and the super from colony No. 2 on top of these two supers. Now cover the newly formed hive with a thin board with a 3-8 inch rim to make it look like an escape board *à la* Porter. Cut an entrance in this escape board by cutting two inches out of the rim in the front end. Now bore an inch hole through the board, one inch from the two-inch rim entrance.

Kill the queen from colony No. 2 and set the colony on this board, bottom-board removed, and also the body with the brood and bees from colony No. 1 on top of this, cover up and you are finished. You will now have shot tower hives *à la* France. Work is now going on in the supers in double time, *hip, hip*, and the colony is gaining in strength daily.

Fifteen days later, in transferring, the two brood stories should be taken off and placed beside the parent colony. Eight days later reduce down to 20 frames, give them a strip of eggs *à la* Alley and you will have a number of queens 25 per cent superior to those reared under the swarming impulse. Two weeks after the eggs are given, kill the queen in the old colony, give half of the brood to the parent colony that has the capped cells, and, at the same time, give the old colony two cells from this parent colony, pro-

tected *à la* West. You will now have your whole apiary requeened, which is very essential in the shock swarm system."



THE HIVE PROBLEM.

A Natural Home for Bees, and a Practical
Hive for the Bee-Keeper, may be
Widely Different.

The hive that might be best for the bees, and the one that would be best for their owner, may not be one and the same thing. I remember arguing with a bee-keeper on this subject, and he brought up for an illustration, to show that hives ought to be so built as to accommodate the bees, that we would not build a house with two or three steps between the kitchen and dining-room, and thus make our wives climb up and down these steps a hundred times a day, or more. He argued that we ought to make hives convenient for the bees, just as we make our homes convenient for our wives. The point is just here: We build hives for our convenience, and not for the convenience of the bees. If we make them so inconvenient for the bees that they can make no headway storing surplus, or if the hives are so far from the natural needs of the bees that they perish in the winter, in either case we must be the losers. In short, a hive must be, to a certain extent, a sort of compromise between what the bees would like, or make for themselves if they could have things their own way, and what the bee-keeper would like. On this subject I think I have never read anything that was more to the point than a recent article in the *American Bee Journal*. It was written by that veteran, Mr. M. A. Gill, and it reads as follows:

"I have read Mr. Aikin's articles on the hive problem with considerable in-

forest, and knowing his great influence among men, and knowing also how prone beginners are to keep changing from one thing to another, and that frequently when the new system is not as practical as the discarded one, I am constrained, at this time, to make a plea for at least uniformity of fixtures.

Periodically, for the past 30 years, men have started out to show by some ideas of their own that the Langstroth hive was not the natural home of bees, and have suggested and put into use other systems, always more complicated, and just as often has the apicultural lane been strewn with the wrecks of blasted hopes and disappointments.

I know there are many inventors who think they have been a boon, and have filled a 'long felt want,' but I defy any one to show any hive and system that will give control of the bees in a more simple manner, and still winter a larger percentage in so great a number—a system that will allow one person to care for a greater number of bees, and put any more honey on the market at the close of the season. I know there are many who will claim it (we will cut out Doolittle); then show us the man, the system and the honey.

Mr. Aikin wants a hive that is the natural home for a colony of bees, and by and through his varied and long experience, he thinks he has found it. Oh, how seductive these natural homes for bees are!

Two years ago a man at Fort Collins transferred a colony from under the bench his bees were on, and it was the strongest colony out of his '30. One would say, 'Surely, that is the natural home for bees.' But, you see, it is not practical.

Two years ago I took a colony from the top of a large air chimney on the

Bank building here, and it was the most powerful colony out of my 600. The chimney was full for ten feet, and was much the same kind of hive or system, as described by Mr. Aikin in one of his previous articles, and about as practical. I thought, when taking out that colony, surely, this is the natural home for a colony of bees; but, then, it is not practical.

Again, we took a colony out of a coyote hole, that ran horizontally into a bank on the Union Pacific railroad, and it was stronger than any colony in the apiary, at the time we got it. This, you see, was the Langstroth, or more, perhaps the 'Long Idea' system. We said, surely it is the natural home for a colony of bees. But it is not practical. But in my opinion it was about as practical as a system that compels a man, who is running hundreds of colonies, to carry an extra number of hives to put on and take off for breeding purposes. Or a system that is made up of a lot of little bodies of hives filled up with sticks and spaces, that should be filled with great, solid spreads of brood. Surely, with such a system, a man is crippled from accomplishing what he could with a uniform and simple system.

Mr. Aikin implies in his last article that he has as many as eight or ten different hives, and that he has had them for years. Surely, a man with Mr. Aikin's keen perception has decided long ago which was best. Then why not shake the whole outfit into one system, and then keep more bees, because he can, if everything is uniform? Otherwise his honey-house and store-rooms are more like a department store or museum. And, O the exasperating bother, if a man wants a super, and the first four or five he comes to belong in some certain place!

I want to mention a case to show what can be done with uniformity and system. A widow, who does not live so very far from Mr. Aikin, keeps bees in boxes nailed up out of boards the same size as an 8-frame Langstroth hive. Lath was nailed in for top-bars $\frac{1}{4}$ inch down from the top of the box. A bottom was nailed on, and a loose cover was improvised. She has no knowledge of bees, but she got a good supply of supers (standard 8-frame Langstroth) and put them on, and then took them off as soon as filled, and in the fall she put \$650 worth of honey on the car from 60 colonies. How did she do it? Simply because she had a uniform and simple system, an old box brimful of bees in the early spring, and the bees were there because the box met their requirements, and was full of breeding space and honey, instead of sticks and spaces.

Honestly, Mr. Aikin, I don't believe she could have accomplished those results with any other system. Its simplicity met her knowledge of the business.

The hive she used was much the same system as advised by that scholarly gentleman and prince among bee-keepers, Moses Quinby, 50 years ago, for farmer bee-keepers, or, in fact, for anyone who didn't care to handle combs.

You will, no doubt, say her success was because of the extra-good season. I think not; as she did just as well comparatively three years ago; also one year ago. I think it is because of those good natural queens in a proper-sized brood-nest, neither too large nor too small, without any frames, sticks or spaces to interfere with rearing the greatest amount of bees in the least amount of space.

Another illustration: One year ago I bought 23 colonies within three miles from your home. They were in

boxes like those described, excepting four in the Littleton hive, which is nothing more nor less than the Heddon system. One colony was dead, and two others weak; but the boxes were packed full of bees by April 15, and I am sure that neither you nor I had any colonies in frame hives to compare with them at that date.

Again, I am confident that these longitudinal boxes were just as strong as if they had been standing upright like the ideal hive you have described in a previous article. But your hive, 30 inches high, is not practical, and my ideal box lying down must have frames in it, as we must have control of the combs, and I will admit that when I put in a set of frames I lessen the possibilities of that colony, and I insist that when you put in two sets of frames and spaces you double the loss in the hive.

Again, my observation has led me to think, at least, that a divisible brood-chamber will not winter as well in Northern Colorado as the regular Langstroth, in the open air. As you know, my preference is for the 8-frame, while you prefer the 10-frame, and you give notice that you may change to a 12-frame.

Let me suggest that just in proportion as you add frames above 8, or at least 9, just in that proportion will you lessen the amount of honey you ship.

If I were living where I wanted a great amount of bees for, say a 20 or 30 days' honey-flow, I should certainly run hives two stories high, for a queen can be rushed for a short time; but out of the thousands of queens I have owned, I have never owned one that could keep more than an 8-frame hive well stocked with brood for five months—the time that is required here to cover the season when bees must be strong. I know of 12-frame hives that have slabs of honey in them 5

years old. If they had been in 8-frame hives, and in a careful man's hands, that honey would have been on the market in sections years ago.

I want to say to beginners, and to all who are disposed to be imitators: Watch and wait; and when you see a man who is caring for more bees without help than you are, and is really shipping more honey than you are with your old reliable Langstroth system, then change, and not till then.

'Blessed be the name of Langstroth.'

PREMATURE JUDGING OF QUEENS.

**A Purchased Queen may Turn out very Poorly,
Yet her Daughters may be Excellent
Queens.**

If there is anything that has puzzled some queen breeders, and given them no end of worry, it is to send out a fine tested queen, and then have the purchaser condemn her in unmeasured terms. It is quite likely that the purchaser is telling the truth, and that it is the journey and the method of introduction, or something of that sort, that has injured the queen. I remember one instance in which I sold a man a queen, and he complained the next spring of the poor qualities of the queen. I with difficulty persuaded him to give the queen a further trial, and to try her daughters. Eventually he bought 30 more queens of the same strain. So many times I have urged bee-keepers to value a purchased queen for the stock that can be secured from her eggs, rather than for what she can do herself, that it is refreshing to come across something in the same line from the pen of Bro. Loolittle, in the American Bee Journal. I would be glad to copy the entire article, but lack of space prevents. The following paragraphs, however,

contain so much truth upon this subject, that I must make room for them. Bro. Loolittle says:

"Regarding the many queens purchased by Messrs. Gallup and Alley being worthless, I take it they were speaking metaphorically. I cannot think they fully meant what their language would convey. As Dr. Gallup alludes to the matter of an exchange of queens between him and Dr. Hamlin's best and prolific queens proved in the other's hands to be the same worthless degenerates (?), which would not keep two or three frames filled with brood with all the coaxing at these Doctors' commands, these queens being similar after the exchange to those which have been so roundly and immoderately condemned, it would appear that such language conveyed more than was really intended.

And as proof of this I will say that I had one of those worthless (?) Hamlin queens sent me as a premium for securing the most subscribers to a certain bee-paper in a given time. The queen came in June, and as she was from one of the best breeders of the seventies, I thought to give her the best possible chance, which I did. Imagine my surprise to find that with all my extra care and coaxing, I could get her to put eggs in only three Gallup frames, and very scattering at that. I came very near pinching her head off in the fall, but finally concluded to give the colony frames of brood and honey from other colonies, and thus the colony was gotten through the winter. The next season she proved no better than she had the years before, and I have no doubt Dr. Gallup would have called her a 'worthless degenerate,' and Mr. Alley would have alluded to her as 'worthless as a house-fly.' Was she thus? Well, we shall see.

I had her in my hand one day, be-

ing just about to pinch the life out of her, when the thought arrested me, that I r. Hamlin would not send me a worthless queen as a premium, and that I would rear a few queens from her, which thing I did, she dying soon afterward, of apparent old age. All of these young queens proved to be extra good ones, and one of them was the mother of the colony which gave me 566 pounds of honey in 1877, and was used in laying the foundation of my present apiary. 466 pounds of this honey sold at 20 cents per pound, and 100 at 15 cents, the total cash resulting from that colony that year being \$108.20. Was her mother worthless? Quite a 'house-fly,' wasn't she? Stood way up by the side of the best of cows as to value! The honey sold from this colony during that year amounted to \$8.20 more than Mr. Alley prized his \$100 queen at, and lacked only \$91.80 of giving as much cash in a single year as the celebrated Root long-tongued queen was ever valued at. And yet, if I do not misinterpret Dr. Gallup, he would no more have bred from that Hamlin queen than he would from those two imported worthless (?), degenerate (?), housefly (?) queens he got of A. I. Root, which he tells us about on page 423 of the American Bee Journal for 1902.

Right here is where many purchasing queens make a great mistake: If the purchased queen does not almost immediately outstrip anything they have in their apiary, she is condemned at once as a breeder, if her head is not pinched. I have had scores of letters telling of queens purchased from different queen-breeders which did not do well in the purchasers' hand, they condemning the breeders for sending out poor, worthless queens. I generally write asking if they have reared any young queens from them, and the reply generally is, 'No, I killed the

queen,' or, 'She is not worth breeding from.' A few have been persuaded to breed from these seemingly worthless purchased queens, and I have several letters in my possession thanking me for insisting on their breeding from these apparently poor queens, for thereby they have some of the finest queens they ever possessed.

Too much emphasis cannot be laid on the fact that it is the daughters of the purchased queen which tell of the value of the mother. And this is a subject which is also treated on in 'Scientific Queen-Rearing.' Had those those parties who reported to Dr. Gallup that 'Doolittle's queens did not turn out right,' bred from them, it is barely possible that they might have found out that they had something similar to what I had in that Hamlin queen. My advice to all is not to condemn a purchased queen till you see what her daughters will do. If such daughters all appear to be poor, then it would be quite reasonable to decide that their mother was truly worthless."

BEEES IN CITIES

They Must be Managed with Great Care to Prevent Their Annoying Neighbors.

Some bee-keepers imagine that because the National Association has always been triumphant when there has been an attempt to drive some member, or his bees, outside the corporation that they can keep bees in almost any way, in almost any situation. I am glad to see that Manager France does not propose to defend every member whose bees are declared a nuisance, regardless of whether they are a nuisance or not. All bee-keepers well-know that a large apiary might be so managed as to become a terrible nuisance to near neighbors in a city

or village. I investigated a case last year in which the bee-keeper was decidedly to blame. He even went so far as to stir up his hybrids purposely on hot afternoons, that he might hoot and jeer at his neighbors when they had to "cut for the house." Then he boasted that he belonged to the National Association, a thousand strong, which would stand by him. It stood by him by advising him to move his bees out of the village. Of course, this is an extreme case; but we all know that, even with the best of management, that bees will sometimes prove an annoyance, if not a nuisance. A neighborly spirit on the part of the bee-keeper, a willingness to do all in his power to lessen the annoyance, puts neighbors in a mood than enables them to bear annoyance somewhat philosophically. For several years I kept bees, sometimes as many as 50 colonies, in this city, with neighbors all around me. The back door of one neighbor was not more than two rods from the bees, yet there was never a word of complaint that reached my ears. In the first place, I kept good natured, pure Italian bees. Except during the honey harvest, I never opened a hive in the middle of the day. All work at such times was done after the bees had stopped flying at night. By the next morning everything was quiet. Another thing, and it is important, I always subdued the bees with smoke before handling them, if it was at a time when they were likely to be cross. Although this is a digression, I wish to say here that I visited an apiary a few days ago in which the owner was overhauling the colonies, and putting on supers, without the use of any smoke, and there was a small-sized swarm of fairly frantic bees in the air. The bees in other apiaries visited that day, apiaries in

which smoke had been used judiciously, were quiet and peaceable, and there was no necessity for using a veil.

But, to return, I was always careful not to take the bees from the cellar at a time when there were any washings on the line. Broken honey and unfinished sections found their way to tables of the neighbors. This honey was not given in such a way as to leave any feeling of obligation, or that I was trying to buy their forbearance. If given in that way, it would often fall short of accomplishing the desired object. A large platter of bits of nice, white, but broken bits of honey, would be carried to a neighbor's, and presented about as follows: "Mrs. Brown, here are some bits of comb honey that I saved out when transferring a colony of bees yesterday. We have had all that we cared for, and I thought your boys might enjoy this, so I brought it over." Of course, the boys, and the old folks, too, enjoy it, and if one of the said boys should happen to step upon a bee, later in the season, and be stung on his bare foot, the remembrance of that honey seems to go a great ways in keeping down the pain and swelling. I have had neighboring women take pains to come a block or two to let me know that a swarm of bees was hanging on a bush. Of course, these neighbors were always remembered with sections of honey.

Among the other good things that Mr. France has done, is that of getting out a leaflet in which this matter of lessening the annoyance from bees, and of keeping in harmony with neighbors, is pointed out at length, and practical instructions as to how the annoyances may be lessened or abated. Every bee-keeper keeping bees near a village, or even near some one's home, should read and heed the advice

that he gives, Mr. France says:

"There are many keeping bees in the suburbs of cities, and whose bees are an annoyance to neighbors.

1. **Spotting Clothes.** This is generally the worst the day bees are set out on summer stands. Bees go only short distances at that date. It is best not to set the bees out on wash days, but the day following; by next week the trouble will be over. If they must be set out, and it is wash-day, go to the neighbor who is washing, explain the situation and offer a present of some honey if they will delay washing one day.

2. **At Watering Places.** Always provide abundance of water in several places for bees. A shallow wooden dish with sloping sides, with a slatted board float, is a good form of watering-dish. Somewhere have some salt, also air slacked lime where bees can go to. There is something about it bees like, and it will save the trouble to supply the bees' demands. If your bees bother a neighbor's pump, go and put a piece of cheese cloth over the spout and fence the bees out as well as furnishing a strainer for the water. Stock tanks are places of annoyance. Just above the water line on inside of the tank fasten a 3-inch strip; it will not bother the stock, and will keep the bees from going there. Also see to it that overflow is so arranged as to not make a mud hole near the tank.

3. **In the Neighbors' Garden or Field.** If your neighbor or his horse is stung by your bees in his garden or field, I find it a good plan to donate some honey, at some time ask him to do such work on cool days or early mornings. It will be a good idea to keep the ground clean then some early morning surprise him by taking your own horse and carriage for him up to breakfast. Generally one such act will establish such good feelings no

farther trouble will arise. I have proven it so.

4. **At Grocery Stores and Residences in Fall.** After the honey season often bees are a great annoyance at above places, especially in empty sugar and syrup barrels, and candy shops. Go to those places and ask to place the packages where bees can not get to them. Go to sugar cane mills and keep the premises cleaned up, and to neighbors' kitchens where bees come in and bother while canning fruit, and ask them to keep the door and windows screened while at such work. Bees do not go where no sweets abound.

5. **In the Highways and Public Places.** If people or teams are stung in such public places, by your bees it is your duty to so locate the bees, or change the surroundings that they do not disturb the public. If damage to person, stock or property is done, by the bees, the owner is liable for damages. And if it continues may become a nuisance. High board fences, or high hedges are a great help. Even with all possible precautions if bees are near the street, the bees at times will bother. Keep out of trouble if possible. Don't get the idea that the National Association can win every case. We must keep within the law if you want protection. Avoid conflicts, compromise, and live up to the Golden Rule."

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Eustis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

For Your Vacation Trip.

The Yellowstone Park, the nation's playground, is larger than the State of Delaware and nearly twice as large as Rhode Island. As in size it exceeds all other national parks of the world combined, so in grandeur and scenery it is unequaled. Here are located the eight great geysers of the world. Mount Washburne, one of the peaks in the park, has an altitude of 10,388 feet. The whole is an area of wonders unparalleled. It is from 1,000 to 5,000 feet above the level of the sea and is therefore within the zone of two seasons.

But to really know this wonderland you should take a trip through there. You cannot spend a vacation season more profitably or more pleasantly. The Chicago, Milwaukee & St. Paul Railway offers choice of routes to and from Yellowstone Park. If you are interested, complete information about the cost of the trip, choice of routes, train service and tickets will be furnished on request.

F. A. Miller, General Passenger Agent, Chicago.

Robt. C. Jones, Michigan Passenger Agent, 32 Campus Martius, Detroit, Mich.

SPECIAL ADVANTAGES FOR THE MANUFACTURE OF BEE SUPPLIES.

RIVER FALLS, WIS., April 28, 1903.

W. Z. HUTCHINSON, Flint, Mich.

Dear Sir: On March 17 we had a severe flood. My old mill dam, which has stood for 35 years, gave way, and I was obliged to remove it entirely. I purchased a power immediately above, and am now engaged in erecting a 26 foot dam which will make a total fall of 50 feet, and supply water-power for the greater part of the year in excess of 100 horse-power. I will enlarge the hive department, and put in some new labor saving machines, which, together with cheap power, and cheap lumber, and the best help I can secure, will, I hope, enable me to build up one of the finest Bee Supply Factories in the world. I aim to supply the Western trade, and it is plain to see that I have natural advantages which my friends in the East do not have, and can never enjoy. We will be running again within a month, and look for patronage from old and new friends.

W. H. PUTNAM,

River Falls, Wis.

5-03-tf

No more weak, dysenteric or foul broody stocks.

PUNIC BEES

(APIS NIGRA)

The bees of the future.

These marvellous bees have been in England, ever since 1886; are far superior to any others, are being adopted in Sweden after 5 years trial and by everyone who tries them.

The truth about these bees is given in the first 7 numbers of the "Bee Master" sent post free to any address for 30 cents.

Virgins, each, 60 cents; doz., \$6.00. Fertile, untested, \$2 00; tested, purely mated, \$6.00 each, post free. Guaranteed against loss in transit, introduction, mating (virgins), foul brood and winter dysentery. Address,

JOHN HEWITT & CO.

Brunswick Works,

Sheffield, England.

6-03-4t

Names of Bee-Keepers

TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged in alphabetically (in the largest States), and, although this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a type writer, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly, in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky. 182	N. C. 60
Ark. 130	Kans. 350	New Mex. 56
Ala. 80	La. 38	Oregon 104
Calif. 378	Mo. 500	Ohio 1120
Colo. 228	Minn. 334	Penn. 912
Canada 1200	Mich. 1770	R. I. 46
Conn. 162	Ma. 275	S. C. 49
Dak. 25	Md. 94	Tenn. 176
Del. 18	Maine 270	Tex. 270
Fla. 100	Miss. 70	Utah 68
Ga. 90	N. Y. 1312	Vt. 200
Ind. 744	Neb. 345	Va. 182
Ills. 900	N. J. 130	W. Va. 172
Iowa. 800	N. H. 150	Wash. 128
		Wis. 625

W. Z. HUTCHINSON, Flint, Mich.

Comb Honey

Is profitably produced only when several important factors are combined. First, we must have the right kind of bees. We all know that there is not only a vast difference between the different varieties, but also a variation in strains of the same variety. Just which are the best bees for producing comb honey, *why* they are best, and how to secure them, is told in one of the chapters of **ADVANCED BEE-CULTURE**.

When bees of the right kind have been secured, then comes the matter of using the right kind of hives, fixtures, sections, etc., to secure the best results with the least labor; and **ADVANCED BEE-CULTURE** has a chapter on "Hives and their Characteristics;" and another on "Sections and their Adjustment on the Hives."

Bees may gather large quantities of white honey, and be so managed as to put very little of it in the sections; or they may be so managed that nearly all of it will go into the sections; all of which is explained in one of the chapters of **ADVANCED BEE-CULTURE**.

Comb foundation costs money. Notwithstanding this, its use is very profitable at some times and in some places. Under other conditions it worse than wasted. Read **ADVANCED BEE-CULTURE** and learn *why*.

ADVANCED BEE-CULTURE is a book of 32 chapters, describing the most advanced methods of bee-keeping from the beginning of the year through the entire season.

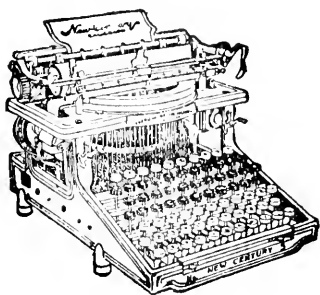
Fifty cents is the price of the book; or it and the **REVIEW** for one year will be sent for \$1.25.

W. Z. HUTCHINSON, Flint, Mich.

The *New-Century*

Caligraph

does the **BEST WORK** and lots of it
EASILY.



STRONG, THOROUGHLY BUILT,
Superior in results to any other.

Write for
"The **BOOK** of the **NEW CENTURY**."

AMERICAN WRITING MACHINE CO.

343 Broadway, N. Y.

DETROIT SALES OFFICE, 819-821 MAJESTIC BLDG.

Standard Italian Queens

Of the Very Highest Grade,

Bred in separate yards, from superior stock of Golden and Leather Colored strains selected from among the best stock of Long-Tongue Clover and honey queens in America; bred by us with the greatest care, for business. We rear all queens sent out by us, from the egg, or just-batched larvae, in full colonies. If you want to know what we have, and what we can do in the way of fine, large prolific queens, just give us a trial order. Prices: untested queens, before July 1, \$1.00 each; 6 for \$5.00; 12 for \$9.00. After July 1, 75 cents each; 6 for \$4.00; 12 for \$7.00. Special rates by the 100. Safe arrival and satisfaction guaranteed. Send for circular. It is free. T. S. HALL, Jasper, Ga.

6-03-11

READERS OF REVIEW,

desiring to know the results of my 40 years' experience in rearing queen bees, and to learn my new process of producing queens, should purchase a copy of **IMPROVED QUEEN REARING**, and a valuable Adel breeding queen, sent by mail for \$2.00. Prospectus and catalog now ready. Adel bees have a world wide reputation.

6-05-11

HENRY ALLEY, WENHAM, Mass

Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-26, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. They have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902.

Mr. Atchley, Sir:—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 130 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm each stored 28 pounds of honey; so you see I have 11 colonies from one, and 56 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen or heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 56 pounds of honey. If any of you scientific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I wish no better. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3- and 5-banded Italians, Cyprians, Altinos, Holylands and Carniolans, bred in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$9.00 per doz. All other months, 75c each \$4.25 for six, or \$8.00 per doz. Tested queen of either race, from \$1.50 to \$3.00 each. Breeders from \$3.50 to \$10.00 each. 1-2 and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY
P. O. Box 79, Beeville, Bee Co., Texas

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co.

Sheboygan, Wis.

Please mention the Review.

MILLER QUEENS

Something worth trying.
Blood and rearing of the best.
Warranted queens \$1.00 each,
or six for \$5.00.

Lawrence C. Miller,
5-03-4t Box 1113, PROVIDENCE, R. I.

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

W. Z. HUTCHINSON, FLINT, MICH.
President.

J. U. HARRIS, Grand Junction, Colo.

Vice President

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C. C. MILLER, Marengo, Ills.

VASSAR QUEENS

Produce fine, 3-banded bees, that winter well, and just roll in the honey. They are a cross between the J. P. Moore, long-tongued stock, and the best of my own. They are gentle, handsome, and the very best workers I ever saw. Price of untested queens \$1.00 each; 6 for \$5.00. Tested, \$1.50 each. Select tested, \$2.00 each. Safe arrival guaranteed.

ELMER HUTCHINSON,

6-03-11

Vassar, Mich.

The Choicest of Tested Queens

By return mail, \$1.00 each.

Three-banded Italians, from the best imported and home-bred mothers. Every bee-keeper knows that these are the best best honey-gatherers. If you want strong colonies and full supers, try our queens, you will not be disappointed. Safe arrival and satisfaction guaranteed. Tested queens \$1.00 each, untested, 75 cents, \$5.00 per dozen.

J. W. K. SHAW & CO.

5-03-1f

Loreauville, La.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$20.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass.

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross.
Shipped from New York or from factory.

Send for catalogue to

J. H. M. COOK, 62 Cortland St., N. Y. City.

Please mention the Review

Apiary for Sale

AT A SACRIFICE.

During my travels as State Inspector of Apiaries, I found an excellent opportunity for some bee-keeper to make an investment. Mr. Wm. Gray, of Ashley, Mich., died last fall, and left an apiary of 100 colonies, nearly all Italians, in chaff hives, on American frames, combs built on wired foundation. There are two reasons why they are to be sold AT A SACRIFICE. There is no one to take care of them, and some of the colonies are slightly infected with foul brood. Of course, these bees cannot be sold and shipped all over the country, but, if some man could buy them, and manage them right where they are, he could make some money. Each hive contains 11 combs, and most of them overflowing with bees. And no colony of the few infected contains more than a few cells of foul brood. There are 80 extracting supers full of empty combs, 14 supers with frames filled with wired foundation, 70 queen-excluders, 12 old empty hives, 12 new hives, and supplies to make 12 more hives, a two-frame Cowan, reversible extractor, besides other articles too numerous to mention. Ten acres of land are leased from the Grand Trunk R. R. Co., and a small dwelling house of six rooms, and a honey house will be sold. No reasonable offer will be refused, but it must be made AT ONCE.

Write to MRS. WM. WRAY, Ashley, Mich.

The above advertisement was written by W. Z. Hutchinson, State Inspector of Apiaries for Michigan.

6-03-11

We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest

Send for Catalog



Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

MICHIGAN

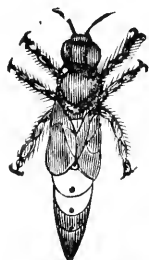
We are Jobbers of Bee-keepers' supplies in this State, representing

The G. B. Lewis Co., and Dadant & Son,

—WHOLESALE AND RETAIL.—

Several carload on hand. Send for 40-page catalog. **Lewis C. and A. G. Woodman,** Grand Rapids, Michigan.

Tennessee Queens



Daughters of Select Imported Italians. Select long-tongued (Moore's), and select, straight 5-band Queens, bred $3\frac{1}{2}$ miles apart, and mated to select drones. No bees owned within $2\frac{1}{2}$ miles; none impure within 3, and but few within 5 miles. No disease. 30 years' experience. Warranted queens 75c each; tested, \$1.50 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

Phacelia Tanacetifolia, the great Honey and Forage plant, can be planted any time, while there is moisture. It blooms 6 weeks after sowing. Seed, 1 ounce 25 cts. postpaid.

6-03-21

O. LUHDORFF, VISALIA, Cal.

Good Queens at Low Prices.

If it is queens you want, why, send direct to the NEW CENTURY QUEEN REARING Co., and get a queen any day, of any race, fresh from the moulds. Untested, of any race, 50c each; 3- and 5-banded Italians, tested, 75c each, all other races, \$1.00. We have an entirely new system by which we rear queens, which explains why we can offer them at such low prices. Send for circular.

NEW CENTURY QUEEN REARING CO., Berclair, Texas.

2-03-11

Victor's Superior Italians

Go by Return Mail, and are Guaranteed to Give Satisfaction, or Money Refunded.

I am ready with the same old true and tried stock of Italian queens and bees as of old. My queen-mothers in yards No. 1 and 2 are serving their fourth year in that capacity, 1900-1903. Their daughters have pleased The A. I. Root Co., W. Z. Hutchinson, O. L. Hershisser, G. M. Doolittle, R. F. Holtermann, F. B. Simpson, and many others prominent in apiculture. In fact, every customer has been pleased as far as I have heard. I COULD FURNISH HUNDREDS OF THE VERY STRONGEST TESTIMONIALS, but space forbids. Practically all the queens that I have sent from these yards were daughters and grand-daughters of the two "Oil Wells," as we often call them. Untested queens, \$1.00 each; select untested, \$1.25 each; tested, \$2.00; breeders, \$3.00 to \$7.00. Send for illustrated price list.

W. O. VICTOR, QUEEN SPECIALIST WHARTON, TEXAS

Bee-Keepers

It is a conceded fact that the bulk of the honey of the future is going to be produced in the irrigated portion of what is known as "Arid America." If you are interested in the progress of apiculture in this vast region, you should subscribe for the

Rocky Mountain

Bee Journal,

a twenty-page monthly; price 50 cents per year.

This is now the only bee publication west of the Missouri river. We have several hundred eastern subscribers, and have still room for more. Write for free sample copy. Address

H. G. Morehouse
Boulder, Colo.

ROOT'S GOODS At Root's Prices Pouder's

Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

WALTER S. POWDER

512 Mass. Ave.

INDIANAPOLIS IND.

STANDARD BRED QUEENS

Buckeye Strain Red Clover Queens, make their mark as honey gatherers; they roll in honey while the ordinary starve. Be convinced of their wonderful merit by a trial.

Muth's Strain Golden Italians are wonders; they are the best in the land.

Carniolans, no one has better.

We never figure the cost, when we purchase breeders. Our aim is quality and our patrons get the result. Large reserve for early orders. Ready to mail when weather permits; safe arrival guaranteed.

Untested, \$1.00 each, six for \$5.00
Select untested 1.25 each, six for 6.00

Tested 2.00 each, six for 10.00
Select tested 3.00 each, six for 15.00
Best money can buy, \$5.00 each.

Send for catalog of bee supplies, and see special inducements.

The Fred W. Muth Co.

Front and Walnut

CINCINNATI, OHIO

Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest, it has the brightest color and sweetest odor. It is the most transparent, because it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation
for cash

a specialty. BEESWAX ALWAYS
WANTED at highest prices. Catalog
giving

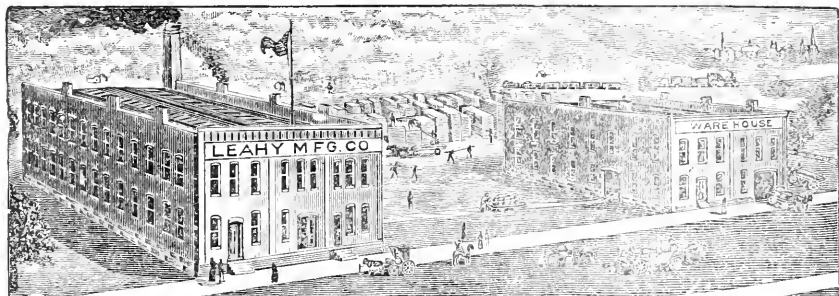
Full Line of Supplies

with prices and samples, free upon
application. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopie has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price; only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee - Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,

JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

Do You See This?

Have you ever solved the problem "what is the *best* all-round household remedy?"

I have carefully studied this problem during 18 years of general practice and think I have solved it. I believe, and my customers do, that there really is no other remedy so generally useful, or that gives such uniform satisfaction as

YELLOWZONES

Beats all how my customers *stay by me* year after year; many most prominent bee men, including Pres., Sec., Gen. Mgr. and Treas. of N. B. K. A. and many members, are among my regular customers—have been for years, and *you know they wouldn't be if Yellowzones were not "Select Tested."* I shall be glad to serve you also.

If you keep but one Remedy in the house it should be **YELLOWZONES**.
\$1.00 per box; Trial size 25 cents
Sample on request.

Your money back and **Another Box** if not satisfied.

W. B. House, De Tour, Mich.

Please mention the Review.

FOR SALE—100 Colonies of Leather Colored Italian Bees. A tested Queen in each Colony. In Dovetailed Hives. Price, after July 15 and during August, \$4.00 each; in lots of 10, \$3.50 each.

F. A. GRAY,
REDWOOD FALLS, MINN.

Please mention the Review.

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

THE A. I. ROOT CO., 10 VINE ST., PHILADELPHIA, PA BEE-SUPPLIES.

Direct steamboat and railroad lines to all points. We want to save you freight.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

SPECIAL ADVANTAGES FOR THE MANUFACTURE OF BEE SUPPLIES.

RIVER FALLS, WIS., April 28, 1903.

W. Z. Hutchinson, Flint, Mich.

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W. H. PUTNAM

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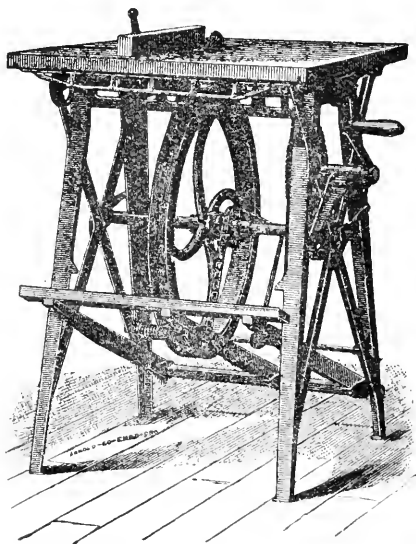
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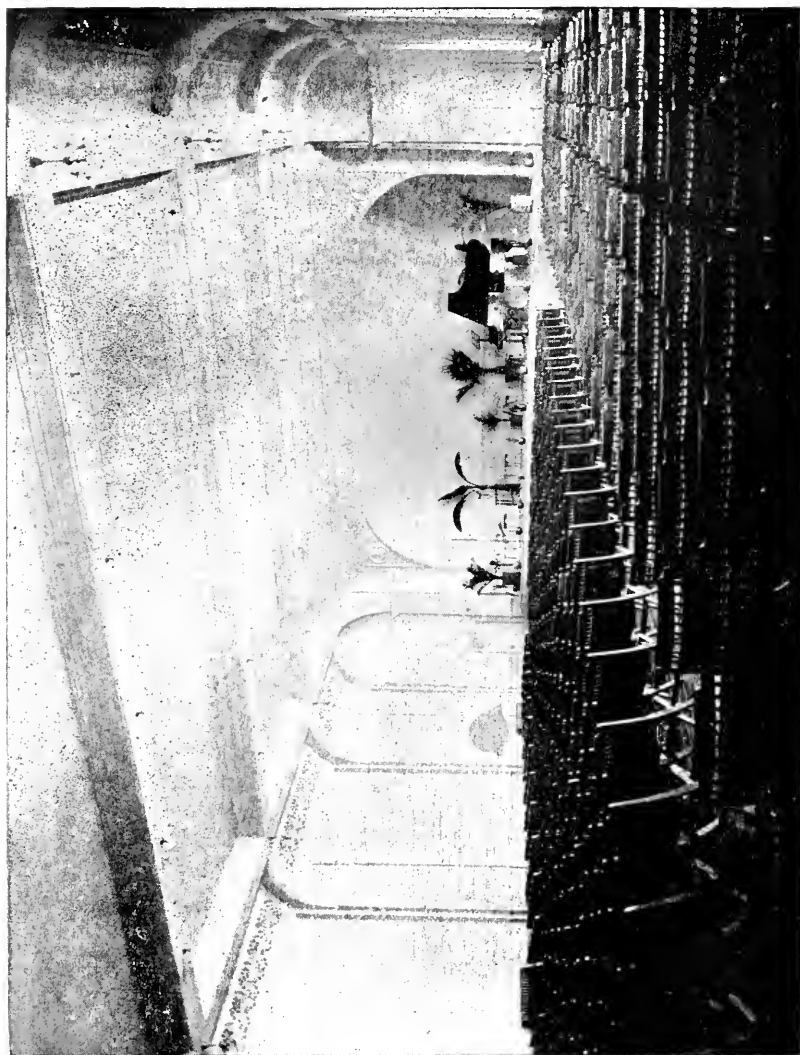
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The Bee-Keepers' Review.

A MONTHLY JOURNAL

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W. Z. HUTCHINSON, Editor and Proprietor.

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END OF THE SEASON PROBLEMS—HOW TO SOLVE THEM. BY R. L. TAYLOR.

A satisfactory solution of some of the problems incident to the closing days of the honey season depends, to a considerable extent, on an intimate knowledge of the character and habits of the flora of one's field, on which dependence must be placed, as the main sources of honey, and on ability, as well, to interpret indications due to the existing degree of moisture and to the prevalent range of temperature. One is poorly equipped for the business of producing honey, who does not know when, in a normal season, his main honey-flow is to begin; and he will find himself in circumstances quite as embarrassing, if not so disastrous, if he is unacquainted with the normal closing period. All this knowledge may be easily acquired when once one appreciates its importance, but, unfortunately, bee-keepers seem to be forced to the conclusion that normal seasons are becoming infrequent now, as one is compelled to take into consideration modifying circumstances, such as temperature and rainfall, for low temperature and abundant rainfall materially retard the coming of the end, while

high temperature and scant moisture greatly hasten it. The "lay of the land" is to be considered, also, as affecting the length of the season. If the sources of nectar are distributed impartially over land having a northern exposure, and land having a southern exposure, and over upland and bottom land, the occupant of the field may rationally expect a season lengthened at either end.

EXERCISE INGENUITY, AND EQUALIZE
THE SECTIONS, AS THE SEASON
DRAWS TO A CLOSE.

Being possessed of all these facts one must learn to use them intelligently. Make allowance for the character of the field and of the season. In a field like my own, study the amount and quality of clover bloom. Watch the blossom buds of the basswood to determine when it promises to open. Having given abundant, but not altogether useless, room in the supers up to the opening of basswood bloom, it behooves one to exercise caution from that time on in the giving of additional supers. If the season is a good one the flow is likely to continue for from ten days to three weeks longer, according to the condition of the clover, dwindling towards the last.

To this point the object has been to have as much nectar as may be collected and as well on the way to the best marketable form possible, but from now on, while the same objects remain, there is the added care that at the close of the season, the process of bringing to marketable condition shall have advanced so favorably that there shall be very little not in a finished state. To do this without risk of lessening the yield requires considerable ingenuity—indeed it is principally a matter of ingenuity. That being the case, no hard and fast rules can be laid down that can be made to serve in all cases. The progress making in the filling of the sections on each colony must be known, and the indications in the apiary of the incoming of honey will be carefully watched. Along with this, continual attention should be given to equalizing—equalizing is the key to the problem. Do not bring more empty sections from the honey house so long as there are cases of them unoccupied on the colonies in the yard—equalize. It would no doubt prove a most salutary schooling to one inclined to give too much room in the supers, to run out of sections at about this stage, if it would lead him to turn his attention seriously to furnishing each colony with room for storage with the sections already on the hives. It would, without question, prove a revelation to him of the capacity of equalization.

As the best I can do on this subject I shall content myself with offering a few hints suggested by my own experience.

ARRANGEMENT OF UNFINISHED SECTIONS THAT ARE TO GO BACK ON THE HIVES.

From the period we are at, onward, remove from the hives all cases nearly completed. Do not wait too long. Such

cases I think furnish a lounging place for some of the bees, and an undesirable staining of the combs is going on, while the process of completing the outside sections is going on but slowly. As soon as may be after such cases are removed, take out the sections and sort them, arranging the unfinished sections in cases to be returned to the bees for completion, as circumstances may dictate. Some of the cases may be filled full, in which case the sections nearest completion are to be placed on the outside, with the wholly completed side of sections next the side of the case. Other cases may be arranged with two or more rows of this sort of sections with outside rows of sections not yet worked by the bees sufficient to fill the cases. Thus will be accumulated a considerable number of cases fitted to accommodate the varied requirements of the colonies in the yard. When less than a full case of unfinished sections is preparing, do not make the mistake of putting these sections on the outside and the unworked ones in the center, thinking thereby to induce the bees to do larger work, for, while they may work on the centre ones, they are likely, unless nectar is coming in freely, and there are plenty of bees, to carry the honey out of the outside ones. Besides, so long as you keep the bees at work on unfinished sections you are certain they are not increasing the numbers of that kind to be handled at the end of the season. Moreover, as the end of the season comes in sight, any of these cases of sections to be finished still remaining should be allotted to the colonies in the yard with judgment. To a strong colony doing good work it may be advisable to give a case full of the unfinished sections, or a case filled partly with them and partly with unworked sections, according to its requirements in the way

of room; it being understood of course, that the case partly filled with unworked sections, furnishes more room than the other; but to a weak colony, no more unfinished sections should be given than it is reasonably certain to complete, though they be in the case furnishing the greater amount of room.

Now, as basswood comes into full bloom, if it be yielding nectar freely, care must be exercised that no colony is without room for the storing of honey. A case of sections may be filled so rapidly when basswood is yielding bountifully that it is practically full while the capping of the honey has scarcely begun. Such a case no longer supplies room for storage. No anxiety need be felt about the capping. That is sure to be attended to. The present need is room. Even yet, if the outlook is favorable, a case of empty sections may be safely placed under those already on. Or there may be colonies in the apiary with two or three supers, none of which is full, but are all well started. The colony has more than it can do. One or two of these should be removed and placed where conditions give promise of completion. Sometimes it is advisable to divide a partly filled case putting about half the sections in another case and complete the filling of each case with unworked sections in the manner already described. The advantages of this course are evident. It practically insures the completion of the sections containing honey, and supplies further room if needed. If a colony has about used up its room, and there is no other resource, a case of fresh sections may be put under those already on the hive, or over a case still having room, and under such as are about full of honey. Keep in mind that sometimes the season holds out longer than is foreseen, and, on the other hand, that the bees have a ca-

pacity for carrying considerable honey, and the same may be put in out-of-the-way places, which will all go into the sections if room be given after two or three days of over crowding. All understand that a colony which has cast a prime swarm, and has been prevented from casting after swarms, will, during a good flow of nectar, fill its chamber with honey. Colonies in this condition with good young queens fairly started laying, will generally do good work, finishing partly filled sections even when the storing capacity of other colonies is practically exhausted. For reasons already suggested, I do not think there is danger of lessening the yield if only a small amount of room be allowed towards the end of the season. It is hardly necessary to intimate that if one puts a high value on drawn combs in sections, he is without an incentive to guard very scrupulously against giving more room than necessary. I do not value very highly the idea of putting empty sections on the top of those nearly full. It is a good enough place to store a super, but before bees will go up through two or three filled cases to work foundation and store honey, they will be badly in need of room in a more convenient situation. Besides, if the plan be at all effective the intervening comb honey becomes the bees' highway, and thus used is more or less stained.

A few years ago there was much said about feeding back honey to secure the completion of unfinished sections, but the idea seems to have, rightly, I think, gone out of fashion. Honey thus produced is not of very good appearance; it begins to candy in the fall; soon becomes solid; and is of a decidedly poor flavor. I now think it is preferable to so manage that the number of unfinished sections is so small that there is no occasion

to resort to that method of disposing of them.

REMOVING SURPLUS WITHOUT TROUBLE FROM ROBBERS.

When the season closes the bees that have been active in the field are very readily taught to be active as robbers. This makes the removal of honey from the colonies at this period a great bug-bear to the novice. And it may well be dreaded even by the adept, when once by mis-management, a goodly army of robbers have been educated to their new vocation. The remedy is in not having the robbers. No honey must be left anywhere where bees can get at it, and no crack or crevice must be overlooked where they can creep through and steal. If this is well attended to the bees will quiet down into contentment soon after nectar gathering ceases. Now, first arrange for the security of the honey at the moment it is removed from the hive. As a matter of course there will be a greater or less number of bees remaining in each case, and provision must be made for their escape without permitting others to gain access to the honey. A honey-house should have windows provided with bee-escapes, and, if the honey is taken from the hive to such a place, it should be piled up on end to give the light free access to induce the bees to forsake the honey for the windows. But unless one has at least two assistants it would probably be found better, for the sake of celerity, to pile the honey up in the apiary. If this plan is adopted, provide places for the piles by putting a hive cover, for each pile, bottom side up, at desirable points for receiving the cases as they are removed, and provide for each pile a cover containing a bee-escape either what is ordinarily known by that name or a board with two or three round holes

each crowned with a wire cloth cone with a pencil hole in the apex. All is now ready for the removal of the supers, and as that is done most conveniently with an assistant, I shall make use of one in this account. Armed with a goose—or a turkey quill of the largest size, one having the wider vane on the side convenient for brushing when the convex side of the feather is uppermost, a screw driver, and a smoker giving plenty of smoke, I take my position on the right side of the hive; John, my assistant, on the other. I first loosen the super, then the cover, which John removes while I pour the smoke through the sections till the bees are mostly out—the work of half a minute—then, at the word, while the smoke still keeps the bees down, he quickly raises the case by the end hand-holes, elevating the front end and bringing the back end forward till it is held perpendicular over the front of the hive so that I can brush off the bees from the bottom in front of the hive, which I do instantly with two or three movements. He puts the case in the pile, drawing an escape or cover over it, while I cover the hive and repair to the next, where the operation is repeated.

In the absence of an escape, a hive cover may be used, and the bees be allowed to escape about sundown, as soon as the other bees are quiet, if one is careful enough to certainly close it again before the bees are moving in the morning, which will be very early if the honey is left exposed. Or, if it be convenient, and it is desired to get the bees out quickly, put the cover of the pile on a hive of brood combs, one of which contains considerable unsealed brood and set it on top of the pile. The bees will very soon leave the honey for the hive, after which both the hive and the honey may be disposed of conveniently. Modifications

of these plans will occur to everyone, and each will adopt a course best suited to his circumstances.

Without extreme care the bees will begin to get an intimation of what is going on, and so it is well, as soon as they begin to show troublesome inquisitiveness, to suspend operations for a few hours.

When robbers are not troublesome a most convenient way to free the cases from bees is, instead of putting them into piles, after the cover is put back onto the hive, to set the case on end on top of the front end of the hive, when the bees will soon run down the front of the hive to the entrance.

I do not do much extracting from unfinished sections. All that weigh seven or eight ounces and more are readily salable for more than they are worth in any other form, and in extracting the ones lighter than that, one could hardly extract enough honey to pay him for his labor, while if the bees are allowed to remove it from the comb it has a substantial value, especially if allowed to be done at a proper time in the spring. It has been held that such combs should be cleaned out by the bees in the fall to prevent the candying of honey afterwards deposited in them, but I have found it quite safe to have the cleaning done in the spring if the combs are allowed to be moistened during the operation by a shower or by spraying. I use these combs for receiving the first honey of the season, for I find bees will often deposit considerable honey in drawn comb in the supers before circumstances are conducive to their building comb there.

As to the care of such combs during the winter little need be said. If they are kept dry and closed against mice and dust they will come out in the spring in good condition.

Lapeer, June 23, 1903.

F OUL BROOD TREATMENT AFTER THE HONEY HAR- VEST. BY WM. McEVROY.

It was after the honey flow was over last fall when I was appointed Inspector of Apiaries for Michigan, and I knew that little could be done in the way of treating diseased colonies, but I thought there could be no harm in knowing exactly what a veteran inspector did at that season of the year, accordingly I wrote to Mr. McEvoy. He wrote me a long, kind letter, giving such excellent advice that I think it ought to be passed on to the public. Most of the advice is particularly applicable to the latter part of the season, but some of it, especially that in regard to management when robbers are troublesome, will soon be very timely. ED. REVIEW.

Friend Hutchinson, I am much pleased to learn that you are to be the inspector for Michigan.

I will try and explain how I work at this season of the year when robbers are on the hunt to rush in the moment you open a hive.

HANDLING BEES WITHOUT TROUBLE FROM ROBBERS.

As I have to examine, and move on from one apiary to another during every hour of the day, I put a big check to all robbing at once, and at the same time put every colony in quiet shape for handling, by commencing at one end of the apiary and smoking and jarring well every colony, so that the bees will fill themselves well.

When I get the last one done I go back to the first one that I commenced on, and, by that time, it will be in a good natured mood, with every bee full of honey, and no robbers from other hives about to bother, as all the bees are filling up in their own hives.

I open the first one I smoked, and so on to the last one, which will be filled up when I get to it. As I remove the centre comb I turn my back to the sun, holding the comb from me in a "slant-in-dickler" position, so that the sun can shine right down on the lower side of the cells, and enable me to see the stain marks of foul brood in cells that were never capped, which is some-

thing that most bee-keepers never notice.

TREATING FOUL, BROODY COLONIES.

Where I find the colony weak in bees, and comb very foul, I put three crosses on the front of the hive; where I find them fair in bees and not very badly diseased, I put two crosses on the front of the hives; and where I find them strong in bees and only a few cells of foul brood I put on one cross only.

When through marking I look at the crosses on the front of the hives, which explain everything, and all that have three crosses on I order the combs to be taken out of these, at sundown, and the bees of two or more of these bad ones to be shaken into an empty hive, so as to get a big swarm of these old bees to start on, as it does not pay to fuss with a lot of weak colonies at any time of the year when the bees are nearly worn out with age. Have the owners put two inches of starters on each of five frames during the day, so that they can place them in the hive the minute they shake the bees off the old combs. All this work must be done in the evening, and plenty of sugar syrup fed, and kept on the hives, so as to fatten up the bees and get them to make the starters into combs at a rapid rate, and store the balance of the old honey in the new pieces of combs.

The fourth evening remove the combs made out of the starters, and give full sheets of foundation, and feed abundance of syrup. All with one cross will be strong in bees, and you can treat these without uniting with others; and all that are not real strong in old bees can be united later.

BEWARE OF OLD COMBS.

Don't agree or consent to the saying of any old comb that ever had brood reared in it, because if you do, some

of these men will never get rid of the disease.

All sections with combs in, and all white combs that never had any brood in, can be saved, if clean of honey, or given to the bees in the evenings to clean up before the diseased colonies are treated, but in no case should these white combs be given to cleaned bees if they contain any honey.

Use plenty of smoke at all times, and an abundance of sugar syrup in each and every case where bees will take it. It pays well to fatten up the bees for business at any time, except in very early spring.

In all places where you find foul brood, order every old comb destroyed at once, or the people will keep using some old combs that contain only a cell or two of the remains of old dried foul brood that is not noticed, and in time the bees will store honey in these few diseased cells, and from such cells feed the diseased honey to larvae, and thus start the trouble again. Urge the destruction of every old comb at all times and in all places, and go dead against any drug folly.

GETTING RID OF FOUL BROOD LATE IN THE SEASON.

Warn well against the old combs and you will make sure work of the disease. Where you find only a few cells in a strong colony, and the owner a good bee-keeper, and careful man, get him to feed his sound colonies until they seal their combs right down to the bottom, and just before going into real cold weather, take the combs out of the hive that has the few foul cells and from the sound colonies that were fed till the combs were sealed take enough of sealed combs to fit up the one from which you took all of the combs out.

Queens are done laying then, cold weather is against their starting any

brood, the queen cannot lay in sealed honey, and the bees will have to consume any honey they took out of the diseased combs as they cannot store it in the capped honey.

This, when properly done, is a sure cure every time.

Very late in the fall you will get calls, far too late to do anything, and everything in a bad state. You will just have to use judgment, and size up your man, consider the distance he has his bees from other apiaries, and so on, because it won't do for him to botch his work, and keep stocks for his neighbors' bees to rob. Get him to kill off all his worthless trash, if he has his bees near others, and save his best ones and treat them early in the next honey season. Every man's rights must be considered, and the man that has the diseased colonies will be dealt with just as fairly by you as those that have not.

Woodburn, Ont., Sept. 8, 1902.



MANAGEMENT AS THE HARVEST IS DRAWING TO A CLOSE. BY H. R. BOARDMAN.

It must be taken into account that different localities require different management, and different seasons require methods to meet the varying conditions that are presented.

Suppose then that the season is nearing its close, and that each hive has on an average, two supers of sections. This means, of course, that some have two, some three, and others only one; the sections being in all stages of completion.

It is desirable to have as many of the sections completed as possible. Just how can this be the most economically accomplished?

There is so much uncertainty in the work of the apiary that, after all, very much must depend upon the skill, judgment and experience of the bee-keeper.

GIVE NEEDED ROOM AT ALL TIMES.

I consider it good management to give all the room, in the most available shape, at all times, that the bees are expected to need to store the honey gathered by them from day to day.

No amount of crowding of the super-room will induce the bees to seal over the combs before the honey is ripened to their liking.

The unfinished combs, those being constructed, furnish economical storage room for the raw nectar, where it can be evaporated, spread out, dried, if you please, ripened, and graded, in a most wonderful manner, from the new honey of today to the finished product.

In its turn each grade will be gradually finished, inspected by a numerous corps of experts, and sealed up to the close of the season, when the wax secretion stops with the honey gathering.

We are sometimes disappointed (?) by a liberal honey flow just at the close of the honey season. If the supers have been crowded so that there is not ample room for the new honey, it will be crowded into every available empty cell in the already finished sections, and remain there, most likely to become thin and drip out after the honey is taken off; a very undesirable condition, and one that many bee-keepers have experienced to their sorrow.

Ample room in the supers, I am certain, facilitates the work of completion.

THE OBJECTIONS TO "FEEDING BACK."

The unfinished sections are a great temptation for various experiments

in feeding back to have them complete.

I have only to say that, without considerable experience, it will most likely be unsatisfactory.

The honey fed back will granulate in the comb, making the sections unmarketable and the whole job unprofitable.

I remove surplus only after the close of the honey season, by the use of bee-escapes; and with reasonable care, there ought to be no trouble with robbers at any time.

Soon after the honey is taken off it should be all graded, and the unfinished sections, that are not marketable, should be extracted, cleaned up by the bees, and stored where they can be protected until the next season; when they can be profitably used again as bait-combs. I have always considered these unfinished combs as profitable when used in this way.

The honey should be stored in a dry place. This is important.

The unfinished sections that are to be marketed (those not entirely sealed over) should be disposed of as soon as possible, while the honey is in good condition.

I don't think it profitable to let the bees empty the unfinished sections. The honey, if left on the hives long enough to become well ripened, will be of good quality, will pay very well, and the combs will be in much better condition if extracted. I use both cases and wide frames in full hives for sections.

I extract the unfinished sections by placing them in the wide frames, after which they are cleaned up by the bees, and then stored for future use by hanging them over head in the bee house.

East Townsend, O., June 16, 1903.

IMPROVING BEES BY CROSSING DIFFERENT VARIETIES. BY ARTHUR C. MILLER.

Mr. Gill's article in the Review for May furnishes food for thought. The case cited was so pronounced as to arrest the attention of so extensive and busy a bee-keeper as Mr. Gill. There is one factor, however, which he failed to note, or failed to tell about, and there are some other factors which seem worthy of further consideration.

SCENT OR ODOR OF LITTLE IMPORTANCE IN INTRODUCING QUEENS.

The queen he speaks of was caged in the colony for three months, and upon being released, was immediately balled. Surely she had been there long enough to acquire the same "scent" as the bees, and if "scent" or "odor" is an important factor she should have met with a better reception. From many experiments through many years I am forced to the conviction that odor has nothing at all to do with a queen's treatment in an alien colony. The sooner this is understood the sooner we will advance in the safe handling and introduction of queens.

The other factors I referred to have to do with the longevity of different strains and races of bees.

BLACK BEES ARE LONG LIVED.

Mr. Gill says the black bees of the colony under observation lived not less than 70 days, and this during the busy part of the year. As a rule, I have found the blacks to be long lived; particularly in comparison with many strains of "improved" Italians now on the market. I have attributed the vitality of the blacks to their not having been so closely inbred, and to the "survival of the fittest." Were it not for some vital defects in their nature (vital to easy and agreeable handling)

I should long ago have used them as a chief factor in establishing a strain. Italians have never proved all I desired, though I have had queens from abroad and from nearly all the leading American breeders. Some of the light colored strains which were vigorous, long lived and prolific were too ugly to be safe. In several cases I strongly suspected their prolificness and long life were due to an admixture of Syrian blood, which also accounted for their temper. Quiet inquiry satisfied me of the correctness of this supposition.

Where strains were undoubtedly pure they lacked in vigor and thrift. They were good in their way, but required too much nursing, coddling, feeding, transposing of brood etc. to suit me at all; and they too readily succumbed to the cold storms, late in the spring; an occurrence so common on the New England coast as to be reckoned on as a certainty.

Now and then a "pure" colony would show exceptional vigor, get "big," stay "big," and produce "big." Such colonies were always of long lived bees. I kept watch of such stocks, bred from them, and tried to maintain them, but they did not keep up to the average. The age limit rapidly fell.

CYPRIAN AND CARNIOLAN BLOOD MAY IMPROVE A STRAIN.

Then I began crossing in the Carniolans, and later, the Cyprians. In a general way there was improvement all along the line, although there was a striking lack of uniformity in many traits, but age limit rose at once. Then began that endless task of culling and selecting, testing and introducing new blood. It is both fascinating and tantalizing.

For the benefit of those who wish to raise the standard of their stock I

would urge the crossing in of Cyprian and Carniolan blood. The proportion of each must be determined by experiment.

I have found the Cyprian most valuable. Carniolan blood does not always help temper even though in their purity the Carniolans are the gentlest bees known. I do not understand why this is so, but only know it is so.

Pure Cyprians I handle bare-faced and bare handed and seldom use smoke.

The longer lived the bees the easier the colony gets big and the more economically it stays so and the more profitable it is.

Providence, R. I., March 3, 1903.

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W. Z. HUTCHINSON, Editor and Publisher

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Flint, Michigan, July 10, 1903

Mrs. Louis H. Scholl of Hunter, Texas, has been appointed to the position of Assistant Entomologist at the A. & M. College, at College Station, Texas, to take the place of Mr. Wilmon Newell, who has resigned to take the place of Assistant State Entomologist of Georgia. Mr. Scholl already had charge of the experiment apiary at the college and we can all rejoice

in the good fortune that has widened his field of labors.

Honey in the making of good candy for bees in queen cages, ought to be heated to 110 degrees when the pulverized sugar is kneaded in, says A. D. D. Wood, of Lansing, Mich. If the honey is at a lower temperature, not enough sugar can be worked in, and when the atmosphere is damp, the candy will absorb sufficient moisture so that it will become sticky, and possibly so soft as to daub the cage and bees.

A CAR LOAD OF BEE-KEEPERS CROSSING THE CONTINENT.

On August 12, a party of bee-keepers will leave Chicago en route for the Los Angeles convention. If this party consists of eighteen persons a tourist's sleeper will be furnished for the exclusive use of the party, and this car will be their home for four days and nights, and, if the stop-over is made at Grand Canyon, this car can be their sleeping place (I suppose) while they stop over there from Saturday until Monday. What could be more delightful for eighteen bee-keepers, those who are sufficiently interested in bee-keeping to cross the continent to attend a convention, than this unconventional convention of four or five days on wheels going across the continent? No convention could possibly approach it for solid enjoyment. I shall take my camera along, and the whole party and the car could be photographed, and the picture be kept as a memento of the happiest journey ever enjoyed. I know of about half enough persons who are going to make up the party, and there are probably others that have said nothing about it. Let all who intend to go write at once to Geo.

W. York, 144 Erie St., Chicago, Ill., so that it may be known how many are going and what the prospects are for getting up a car load.

A BUSY MAN—1,100 COLONIES—SHOOK SWARMING A SUCCESS.

I wrote to Mr. M. A. Gill, asking him for an article on the best management at the close of the honey harvest. His letter in reply, while on a different subject, is so bright, pointed and graphic, that I feel I must let my readers enjoy it with me. It breathes success in every line. Here it is:

Longmont, Colorado,
June 21, 1903.

Friend Hutchinson:

Your letter requesting me to write an article on closing the season is at hand, and I am going to ask you to let me off until the August issue. You see, my head now, night and day, is full of the other end of the season. You will realize how busy we are when I tell you that wife and I, with one good man, have eleven apiaries to handle for swarms. We are having from 20 to 40 queens coming each day from the East. As you know, we are handling them by the shaking plan, and when we ride from 15 to 20 miles each day, visit two apiaries, go to the bottom of, say 200 colonies, and shake from 20 to 50 swarms, I am getting rather more practice than theory, and sleep is about the only thing I need when I get home nights; and I shouldn't expect my "think shop" and pen to connect very often if I should attempt to write anything for print. Later, one can trust more to help, but now is the time for the practical and interested party to be on deck.

Forced swarming to prevent swarming works like a charm if properly

done; but if improperly done, it might make more swarming than letting the bees alone. I shall make about 400 increase from 1100 colonies, getting queens from the basswood regions where they practice dequeen-ing. One year old queens, fine stock, at 25 cents each it's a snap. I run them in with the hatching bees in the old hive, and in two weeks they are in normal condition.

M. A. GILL.

HOTEL ACCOMMODATIONS AT LOS ANGELES.

Los Angeles, California,

June 17, 1903.

W. Z. Hutchinson, Pres. N. B. K. A.,
Flint, Mich.

Dear Sir:—

For the benefit of those desiring to attend the meeting of the National Bee-keepers' Association at Los Angeles, August 18-20, would say that no one need stay away through fear of lack of hotel accommodations. There are over two hundred hotels and lodging houses in the city and restaurants galore.

Prices for board and lodging at first class hotels range from two to five or six dollars per day. Lodging room with good bed about fifty cents per night. Meals at restaurants from fifteen cents up—a good meal can be had for twenty-five cents.

Perhaps the most satisfactory way is to hire a room and take your meals at a restaurant when and where you please. There are perhaps a dozen good hotels within a radius of three blocks of the hall where the meetings will be held and it is in contemplation to select one of these as a kind of headquarters for bee-keepers and their friends. Having a very hazy idea as to how many of you may come from

'back east,' I suggest that those wishing reservations made write the undersigned, stating what they want whether board and lodging or board or lodging alone, giving also limit of cost to be incurred. All communications of this nature will have prompt attention and will send you card of house where located and you can come when you please. If advised when you will arrive there will be some one at the train to meet and care for you.

Fraternally,

C. H. CLAYTON,

739 Aliso St.

MICHIGAN LAW IN REGARD TO SPRAYING TREES WHILE IN BLOOM IS
SADLY DEFECTIVE.

The law in Michigan in regard to the spraying of trees, says that trees infected with disease or insects must be sprayed, but not when in bloom, except in case of canker worm. No penalty is provided for in case the law is violated, but this is not a serious defect, as there is a general law that makes the violation of a statute a misdemeanor. The weak point is where spraying is allowed when trees are in bloom. If said spraying is done for canker worms. This opens the gate for spraying at any time, as it is an easy matter for any orchardist to assert that he is spraying for canker worms, and it would be a difficult matter, many times, to prove that he was not. This is much in the same line as the attempt to have incorporated into the New York law a clause allowing spraying while trees were in bloom, if done for experimental purposes. Every man could spray when trees were in bloom, and say he was doing it for experimental purposes.

Mr. Heddon writes me that he has

been comparing notes with farmers that come to his office, and that there is not a bit of question—but bee-keepers are seriously damaged by the foolish spraying of trees while in bloom. He says one farmer told him that there was a law on the subject, but there was a string tied to it which made it worthless. I have already explained what the string is. I was talking recently with Mr. E. D. Townsend on this subject, and he says that this clause allowing the spraying for canker worm when trees are in bloom, makes the law of little value. He says it may have some moral effect, but there is no use of trying to secure any convictions under the law as it now reads. Mr. Heddon says if the law has 'a string tied to it,' then we must have a new law with no string attachment. He says he is well satisfied that he has lost more than \$10,000 in the last 15 years from the spraying of trees while in bloom.



OUR FRONTISPIECE.

The frontispiece for this month shows the interior of the hall where the Los Angeles convention is to be held. In regard to this hall, Mr. Geo. W. Brodbeck writes as follows:

"Blanchard Hall, 235 So. Broadway, is located in one of the prettiest business blocks of the city. The new Mason opera house, the new Chamber of Commerce in course of erection, the City Hall, together with the Public Library, are all within a stone's throw of each other.

Blanchard's Music Hall, as it is often called, has a seating capacity of from 500 to 700, its acoustic properties are unexcelled, and its central location is such that the strangers and sojourners cannot fail to find it. Californians are looking forward with open hearts and extended hands for the

coming of their brother bee-keepers to this the 'Angel City' of the United States and Canada, with a royal reception awaiting."



A VISIT TO THE HOME OF E. D. TOWNSEND.

The weird song of the Whilpoorwill in the gloaming, the clear, resonant whistle of Bob White from the topmost rail of the meadow fence, delicious speckled trout fresh from limpid lake or stream, wild strawberries and juicy young wintergreens, plucked where splay, woodsy breezes fairly bewitch the sense of smell—these are some of the delightful things enjoyed recently by the editor of the Review, in a visit to the home of Mr. E. D. Townsend, in Northern Michigan.

Mr. Townsend will doubtless be remembered as the man who manages an apiary, fifty miles from home, by visiting it only four times a year; extracted honey being the product. He has visited this apiary only once this year—to remove the packing and put two stories of empty combs on each colony. He expects to visit it only twice more—once to extract the honey, and again to pack the bees for winter.

He is this year running for comb honey, an out-apiary of 100 colonies; practicing shook swarming, and visiting the yard once a week. We drove out to this apiary (ten miles) and I found it romantically located, on a side-hill, among the stumps and bushes of an old pinery, or what was once an old pinery, away back half a mile or more from everybody and everything. Like Mr. Cogshall, Mr. Townsend prefers to have bees so located that he can "wade in" and work them just when and how he sees fit, with no fear that they will annoy some one. Even the home apiary is 40 rods from any house.

When we reached the yard, Mr. Townsend removed supers of finished

comb honey, and shook such colonies as had so much as an egg in a queen cell, while I looked on, asked questions and took photographs. At noon we ate our dinner in the honey house, using a hive cover for a table, while crates of sections answered for seats. Such days as these make life worth the living.

At the home apiary are 150 colonies, devoted mostly to extracted honey production. There is also another out-apiary of 100 colonies devoted to the production of extracted honey.

Mr. Townsend is certainly one of the best bee-keepers that I have visited, and he is putting his whole thought and attention to the successful management of large numbers of bees with the least possible labor. As I expect that he will eventually write a series of articles for the Review, I will not forestall him by describing some of his plans and methods.



HOW EXPERIENCE AIDS A MAN.

Experience aids a man by giving him a gauge or measure with which to compare facts that are brought to his notice. Suppose a man who has never traveled, nor read very much, starts out upon a journey; he forms imperfect and exaggerated ideas regarding many things that he sees, simply because he has never seen nor heard of much. He has had no experience. When a man has had half a dozen experiences similar to the one he is now having, he has something to judge and measure it by. A very young man sent out to report the good things said at a convention, could not be expected to make a desirable report. He would not possess the experience by which to measure, gauge, and recognize the good points.

Often a man needs to see other countries in order to truly appreciate

his own. How often it is a stranger, some traveler, who discovers a wonderful possibility in a region of country. Men who had lived there all their lives, failed to recognize the wealth, lying, undeveloped, at their feet. They had no other knowledge or experience by which to measure it.

It is in this line that bee-keepers are often benefited by attending conventions. They are able to gain some new facts and features, by which to compare those they already possess. The bee-keeper who always stays at home can never reach the success that he might, did he get out in the world and mingle with his brother bee-keepers. The conditions in California are quite different from those in the East, and it is well worth the while of the eastern man to investigate them and compare them with those of the East. To say nothing of the pleasures of the trip, it may pay many a bee-keeper in dollars and cents, to attend the coming convention in Los Angeles. It is not likely that many from the far East will think that they can afford the trip, but, from the Mississippi valley west, there ought certainly to a grand rally at Los Angeles in August.



DON'T ATTEMPT TOO MUCH.

How many times in my travels as State Inspector of Apiaries, do I see the ill effects of a man trying to do too much—overburdened with work.

I recall one instance of a young man with 120 acres of land, and one hired man. Last spring he bought thirty colonies of bees. He did not examine them at the time of purchase, but, later, he found them infected with foul brood, and sent for me to come and help him. He apologized for the appearance of his yard. He had mowed the grass, but "had not had time" to rake it up. In his dwelling the flies

made merry by day and the mosquitoes sang at night, yet there was a new wire screen door lying in the kitchen waiting for him to "get time" to hang it.

He spent half a day driving around with me visiting bee-keepers and examining their bees and several times he mentioned that some crop of his was not quite so good as the one I was admiring. He had been so behind with his work that he did not get it in soon enough. He finally admitted that he "might better have left the bees alone; that it would have been money in his pocket if he had." Now they must be treated for foul brood, which would add to his labors.

I sincerely sympathized with this poor fellow that had so many irons in the fire, but but there are many others just like him. When he bought those bees and brought them home, it would probably have been money in his pocket if he had at once burned them up. He would then have had more time and thought to have bestowed upon his farm.

What comfort is it, what benefit is it, to any one, for a man to so burden himself with a multiplicity of duties that he never completes one task without seeing about him a dozen others that ought to be completed.

A multiplicity of businesses add greatly to a man's worries. I presume that Mr. Gill, with his 1,100 colonies of bees is not hurried and worried as is this man with his 120-acre farm, and thirty colonies of bees, and there is no question as to which is making the most money.

It was hard work for me to give up setting up, with my own hand, the advertisements in the Review, to give up "making up" the "forms" myself, to allow some one else to help about answering the mail, to put down the carpets for Mrs. Hutchinson, to mow

the lawn, etc., it was hard to give up these things that I had always done, but other duties that seemed more important, came crowding in and I was obliged to drop something else, or break down from overwork.

By the way, a good friend of mine, upon whose shoulders rest a multiplicity of burdens, wrote me not long ago: "You can thank your lucky stars, W. Z., that you have only the Review to look after."

PROPOSED AMENDMENTS TO THE CONSTITUTION OF THE NATIONAL BEE-KEEPERS' ASSOCIATION.

President's Office National Bee-Keepers' Association.

Flint, Mich., June 27, 1903.

The following amendments to the constitution of the National Bee-Keepers' Association have been approved by a majority of the Board of Directors, and of the Executive Committee, but before laying them before the coming convention at Los Angeles, it is desired that all shall have an opportunity to criticize and suggest, hence their publication. Suggestions and criticisms may be sent to President Hutchinson, who will lay them before the committee having the matter in charge.

ARTICLE II.—Membership.

Sec. 1. To be amended to read as follows:

Sec. 1. Any person who is interested in bee culture, and in accord with the purpose and aim of this Association, may become a member by the payment of \$1.00 annually to the General Manager or Secretary; and said membership shall expire at the end of one year from the time of said payment, except as provided in Sec. 10 of Art. V of this constitution. No member who is in arrears for dues, as shown by the books of the General

Manager, shall be eligible to any office in this Association, if such disqualification shall occur during the term of any officer, the office shall at once become vacant.

Sec. 2. To be amended to read as follows:

Sec. 2. Whenever a local beekeepers' association shall decide to unite with this Association as a body, it will be received upon payment by the local secretary of 50 cents per member per annum.

ARTICLE IV. Officers.

Sec. 1. To be amended to read as follows:

Sec. 1. The officers of this Association shall be a General Manager, a President, a Vice President, a Secretary, whose terms of office shall be for one year, and a board of twelve Directors, whose term of office shall be four years, or until their successors shall be elected.

Sec. 3. To be amended to read as follows:

Sec. 3. The President, Vice President, Secretary, and General Manager shall be elected by ballot, during the month of December of each year, by a plurality vote of the members, and assume the duties of their respective offices on the first of January succeeding their election.

Sec. 4. To be amended to read as follows:

Sec. 4. The President, Vice President, Secretary, and General Manager shall constitute the Executive Committee.

Sec. 5. To be amended to read as follows:

Sec. 5. The Directors to succeed the three whose term of office expires each year shall be elected by ballot during the month of December of each year by a plurality vote of the members. The three candidates receiving the greatest number of votes

shall be elected and assume the duties of their office on the first of January succeeding their election. The Board of Directors shall prescribe how all votes of the members shall be taken, and said Board may also prescribe equitable rules and regulations governing nominations for the several officers.

ARTICLE V.

Sec. 3. To be amended to read as follows:

Sec. 3. Secretary. It shall be the duty of the Secretary to keep a record of the proceedings of the annual meeting; to receive membership fees; give a receipt for them, and turn all monies received over to the Treasurer of the Association, together with the names and post office addresses of those who become members; to make an annual report of all monies received and paid over by him, which report shall be published with the annual report of the General Manager; and to perform such other duties as may be required of him by the Association; and he shall receive such sum for his services as may be granted by him by the Directors.

Article VII.—Vacancies.—Amend by adding the following clause to the end thereof: Any resignation of a member of the Board of Directors shall be tendered to the Executive Committee; any resignation of a member of the Executive Committee shall be tendered to the Board of Directors.

Article. XII. Amendments. — This Constitution may be amended by a majority vote of all of the members voting, provided such proposed amendment has been approved by a majority vote of the members present at the last annual meeting of the Association, and copies of the proposed amendment, printed or written, shall have been mailed to each member at least 45 days before the annual election.

EXTRACTED

SUMMER DRESSES.

Bee Keepers Ought to Give it Special Attention.

The busiest time for bee-keepers comes in the hottest time of the year; consequently the question of dress is of no small importance. Dr. Miller, in his new book describes his practice, and a sensible one it is. He says:

"During the principal part of the honey flow, a prominent element of hardship is the endurance of the heat. Sometimes the heat has really made me sick, so that in spite of a press of work, I have been obliged to give up work, and lie down for an hour or two. At such times you may be sure that I am not very warmly clad. One straw hat and veil, one cotton shirt, one pair cotton overalls, one pair cotton socks and one pair shoes, comprise my entire wearing apparel. Before noon, shirt and pants are both thoroughly wet with perspiration.

In this heated condition, I sponge myself off with cold water before dinner, put on dry shirt and pants, and hang up the wet ones in the sun to be put on next day. I am sure that by this refreshing change I am able to do more work. It might be thought that applying cold water all over the body when every part is dripping with perspiration might make me take cold. I have never found it so, even if followed up every day. The body is so thoroughly heated that it easily resists the shock, and a brisk rubbing leaves one in a fine glow."

THE NATIONAL CONVENTION

Why Bee-Keepers Should Attend. Some Californian Attractions.

The social feature is now the most important and desirable feature of most of the bee conventions. Especially is this true of the veterans. Of course, they do occasionally pick up something new, and men who have seldom attended often learn much that is of value to them. Occasionally there is a reason, aside from these, why even the veterans should attend. This is the case this time, and E. R. Root, in *Gleanings*, tells it so graphically that I take pleasure in copying it. Speaking from actual experience, Bro. Root says:

"Los Angeles, Cal., is to be the place of the next meeting of the National Bee-keepers' Association. The time set is August 18-20. The Executive Committee, in deciding on this date and place, based their decision on the low railroad rates in force at that time on account of the encampment of the G. A. R. in San Francisco the same week.

It was suggested that we make the Santa Fe route the semi-official one of the bee-keepers. A tourist sleeping car could be made up largely of bee-keepers, to start from Chicago in time to give a day's stop-off at the Grand Canyon—probably the most remarkable scenery of the kind the world affords. The train is then to go on to Los Angeles, fitly named the 'City of the Angels,' one of the most delightful cities I have ever visited. It is not delightful because of its architecture, but because of the surrounding scenery and its bracing climate. Cool evenings and warm days make living there most enjoyable.

This is a good year for California;

and if one desires to see the real extent of bee-keeping possibilities in one of the fairest climes the world affords, let him take this trip. Do not go simply because you may get enough at the convention to pay you, but because your horizon of life will be enlarged, and because, years afterward, you can live over again (in memory) one of the most delightful trips you ever took. Just think of it! You can take a car in the morning at Los Angeles, and go to the coast and take a sea-bath. You can then come back to Los Angeles, and eat strawberries and pick roses. In the afternoon you can go to Pasadena, a little city that is even more beautiful and more perfectly laid out than Los Angeles, where the great wealth of the East has been poured. Indeed, it is almost a heaven on earth. An hour's ride will take you up into the mountains where you can get above the clouds—yes, may take a sleighride and enjoy a good snowballing. Just think of it! a sea-bath in the morning, strawberries and roses at noon, a sleighride above the clouds, and snowballing, all in one day! Talk about going 'from the sublime to the ridiculous'! This beats anything for a rapid change of season and scenery. While this is possible in the spring of the year, it may not be possible in August.

But one of the most thrilling trolley-rides (dangerously near precipices) that can be imagined is to take an electric car and actually glide above the clouds and look down upon the valley spread out like a panorama thousands of feet below. One can see the ocean, and the cities of Pasadena and Los Angeles, and all the small outlying towns, with their fine orange-groves and all the beautiful luxuriance of a tropical climate. In short, he can see typical Southern California.

Bee-keepers, if you fail to take in a trip of this kind (and it is the opportunity of a lifetime) you will be missing one of life's greatest pleasures.

The round trip from Chicago is \$50.00. Rates in the tourist sleeper will be very low. I do not remember just now what they are; but particulars can be obtained, I think, by applying to Sec'y G. W. York, 111 Erie St., Chicago."

I wish to particularly emphasize the following sentence: "Do not go simply because you may get enough at the convention to pay you, but because your horizon of life will be enlarged, and because, years afterwards, you can live over again (in memory) one of the most delightful trips you ever took."

THE GRAND CANYON.

A few Words Descriptive of this Great Wonder of the West.

A trip from the East to attend the convention in California is quite an undertaking, and will cost money. Hence the man who goes should make the most of it. In all of the great West there is probably no greater sight than that of the Grand Canyon on the line of the Santa Fe railroad in Arizona. These natural wonders are difficult to describe, both language and picture fail. From the book called "The Titan of Chasms" I extract the following picturesque attempt at describing this great rent in the earth's surface:

"Stolid, indeed, is he who can front the awful scene and view its unearthly splendor of color and form without quaking knee or tremulous breath. An inferno, swathed in soft celestial fires; a whole chaotic under-world,

just emptied of primeval floods and waiting for a new creative word, eluding all sense of perspective or dimension, outstretching the faculty of measurement, overlapping the confines of definite apprehension, a bodiless, terrible thing, unflinchingly real, yet spectral as a dream. The beholder is at first unimpressed by any detail, he is overwhelmed by the ensemble of a stupendous panorama, a thousand square miles in extent, that lies wholly beneath the eye, as if he stood upon a mountain peak instead of the level brink of a fearful chasm in the plateau, whose opposite shore is thirteen miles away. A labyrinth of huge architectural forms, endlessly varied in design, fretted with ornamental devices, festooned with lace-like webs formed of talus form the upper cliffs and painted with every color known to the palette in pure transparent tones of marvelous delicacy. Never was picture more harmonious, never flower more exquisitely beautiful. It flashes instant communication of all that architecture and painting and music for a thousand years have gropingly strived to express. It is the soul of Michael Angelo and of Beethoven.

A canyon, truly, but not after the accepted type. An intricate system of canyons, rather, each subordinate to the river channel in the midst which in its turn is subordinate to the whole effect. That river channel, the profoundest depth, and actually more than 6,000 feet below the point of view, is in seeming a rather insignificant trench, attracting the eye more by reason of its somber tone and mysterious suggestion than by any appreciable characteristic of a chasm. It is perhaps five miles distant in a straight line and its uppermost rims are nearly 4,000 feet beneath the observer, whose measuring

capacity is entirely inadequate to the demand made by such magnitudes. One can not believe the distance to be more than a mile as the crow flies, before descending the wall or attempting some other form of actual measurement.

Mere brain knowledge counts for little against the illusion under which the organ of vision is here doomed to labor. Yonder cliff, darkening from white to gray, yellow, and brown as your glance descends, is taller than the Washington Monument. The Auditorium in Chicago would not cover one-half its perpendicular span. Yet it does not greatly impress you. You idly toss a pebble toward it, and are surprised to note how far the missile falls short. By and by you will learn that it is a good half mile distant, and when you go down the trail you will gain an abiding sense of its real proportions. Yet, relatively, it is an unimportant detail of the scene. Were Vulcan to cast it bodily into the chasm directly beneath your feet, it would pass for a boulder, if, indeed, it were discoverable to the unaided eye.

Yet the immediate chasm itself is only the first step of a long terrace that leads down to the innermost gorge and the river. Roll a heavy stone to the rim and let it go. It falls sheer the height of a church or an Eiffel Tower, according to the point selected for such pastime, and explodes like a bomb on a projecting ledge. If, happily, any considerable fragments remain, they bound onward like elastic balls, leaping in wild parabola from point to point, snapping trees like straws; bursting, crashing, thundering down the declivities until they make a last plunge over the brink of a void; and then there comes languidly up the cliff sides a faint, distant roar, and your boulder that had withstood the

buffets of centuries lies scattered as wide as Wycliffe's ashes, although the final fragment has lodged only a little way, so to speak, below the rim. Such performances are frequently given in these amphitheaters without human aid, by the mere undermining of the rim, or perhaps it is here that Sisyphus rehearses his unending task. Often in the silence of night some tremendous fragment has been heard crashing from terrace to terrace with shocks like thunder peal.

The spectacle is so symmetrical, and so completely excludes the outside world and its accustomed standards, it is with difficulty one can acquire any notion of its immensity. Were it half as deep, half as broad, it would be no less bewildering, so utterly does it baffle human grasp."

In a late issue of the American Bee Journal, Bro. York has the following to say in regard to stopping off and visiting this great wonder of Nature.

"The Santa Fe Route to Los Angeles is the one over which likely most of the bee-keepers will go who live east of Chicago. Of course, all who live along this route will also go by that road. In the advertisement of the Santa Fe in this issue are described two trips, one of which provides for a stop-over at the Grand Canyon in Colorado, while the other goes right through to Los Angeles without any extra stop-overs. Some of us have about decided to take the trip that has a stop-over at the Grand Canyon, and rest there over Sunday, arriving there Saturday evening and leaving Monday morning. It is a long journey from the East, or even from Chicago, to Los Angeles, so that a day's rest, especially on Sunday, would doubtless be much appreciated. By leaving Chicago Wednesday evening, at 10 o'clock we can stop at the Grand Canyon and still arrive in Los Angeles a full half

day ahead of the first session of the convention, which meets on Tuesday evening, August 18. If we can get together a company of 18 to start from Chicago at the same time, we can have a tourist car to ourselves, which will not only take us to the Grand Canyon, but after visiting that wonderful place we can continue the journey in the same car. This, it seems to us, would be very desirable. We will be glad to make all necessary arrangements here in Chicago for any who wish to join the company starting from here on Wednesday evening, August 12.

Those who are unable to spend quite as much time on the way can leave Chicago on Friday evening and still get to the convention on time on Tuesday. But as this trip to Los Angeles may be the one of a life time, it seems to us that we all can arrange to spend two days more, and leave Chicago on Wednesday evening, August 12.

We will be glad to announce in the Bee Journal the names of all who expect to go to the convention, if they will let us know. It is just two months until the great meeting will be held in Los Angeles. This will be ample time for all who can go, to make every necessary arrangement for the trip."

GOING TO THE CONVENTION.

Some Particulars Regarding Cost, Stop-Over, Going to the Grand Canyon, Etc.

Before deciding positively about going to the California convention, most of us would like to know some of the particulars regarding cost, time of starting, stop-overs allowed, etc., and the following in a late issue of the

American Bee Journal covers these points so well that I copy it. It reads as follows:

"The Los Angeles convention is going to be well attended, if we may judge by the inquiries coming in. Here is a sample:

Editor Bee Journal:—My wife and self are planning to go to the big convention at Los Angeles, and would like to go with the crowd from Chicago, August 12:

1. How many stop-overs are allowed and where?

2. Must we all go home together?

3. Does \$50 include the berth in the sleeping-car?

4. How much extra would it cost to see Grand Canyon?

5. How much do you think it will cost for a couple to make this trip from Chicago, including all expenses?

6. Would you advise us to go via Chicago, or try some route from the Twin Cities?

Any figures, advice, or particulars, regarding this matter will be greatly appreciated.

St. Croix Co., Wis.

To the foregoing we may offer the following:

1. As we understand it, as many stop-overs as are desired will be allowed west of Colorado.

2. It is not necessary that all should make the return trip together. Neither is it necessary that any one should return over the same route as when going. Arrangements can be made to go one way and come back another at the same cost.

3. Fifty dollars for the round trip from Chicago does not include the cost of berth which, in a tourist car, is \$6.00 for one way.

4. The extra cost for seeing the Grand Canyon will be \$6.50 for carfare and \$2.00 for berth, if taken.

5. It would be very hard to esti-

mate the cost of the trip, as different people will have different views, and different sized pocket-books. However, it ought not be very hard for each one to estimate about what his expenses would be, when he knows the exact cost of the railroad and berth tickets. It would be well, though, to take plenty of money along, as there may be some side-trips that one would like to take out there. After going so far, it would seem too bad to deny one's self anything that really ought to be seen and enjoyed. We are looking forward to it as the one great trip of our lifetime, and although we can not be away from our office much more than ten days, we hope to take in everything possible during the trip.

6. Of course, we would advise all who can possibly do so to join the party going from Chicago, as it will be "the more the merrier." We are anticipating about the best part of the trip on the going journey. There will be ample time for visiting, getting acquainted, enjoying the scenery, etc., as we go along. There is really no fun traveling or seeing things alone.

We have answered the questions of Mr. Hanegan in this way, as we suppose there are others who would like the information that we have tried to give. If there is anything else connected with the trip that any other reader would like to know we would be pleased to tell all about it, so far as we are able. We only hope that every bee-keeper, who can possibly do so, will arrange to go to the Los Angeles convention. California bee-keepers are going to do great things for those who attend, and we are anticipating the largest and best convention the National has ever held. Of course, every bee-keeper who has not yet been to California will want to go on this trip. It will be a memorable time and convention.

For Your Vacation Trip.

The Yellowstone Park, the nation's playground, is larger than the State of Delaware and nearly twice as large as Rhode Island. As in size it exceeds all other national parks of the world combined, so in grandeur and scenery it is unequalled. Here are located the eight great geysers of the world. Mount Washburne, one of the peaks in the park, has an altitude of 10,388 feet. The whole is an area of wonders unparalleled. It is from 1,000 to 5,000 feet above the level of the sea and is therefore within the zone of two seasons.

But to really know this wonderland you should take a trip through there. You cannot spend a vacation season more profitably or more pleasantly. The Chicago, Milwaukee & St. Paul Railway offers choice of routes to and from Yellowstone Park. If you are interested, complete information about the cost of the trip, choice of routes, train service and tickets will be furnished on request.

F. A. Miller, General Passenger Agent, Chicago.

Robt. C. Jones, Michigan Passenger Agent, 32 Campus Martius, Detroit, Mich.

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Enstis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

VASSAR QUEENS

Produce fine, 3-banded bees, that winter well, and just roll in the honey. They are a cross between the J. P. Moore, long-tongued stock, and the best of my own. They are gentle, handsome, and the very best workers I ever saw. Price of untested queens \$1.00 each, 6 for \$5.00. Tested, \$1.50 each. Select tested, \$2.00 each. Safe arrival guaranteed.

ELMER HUTCHINSON,

6-03-11

Vassar, Mich.

No more weak, dysenteric or foul broody stocks.

PUNIC BEES

(APIS NIGRA)

The bees of the future.

These marvellous bees have been in England, ever since 1886; are far superior to any others, are being adopted in Sweden after 5 years trial and by everyone who tries them.

The truth about these bees is given in the first 7 numbers of the "Bee Master" sent post free to any address for 30 cents.

Virgins, each, 60 cents; doz., \$6.00. Fertile, untested, \$2.00; tested, purely mated, \$6.00 each, post free. Guaranteed against loss in transit, introduction, mating (virgins), foul brood and winter dysentery. Address,

JOHN HEWITT & CO.

Brunswick Works,

6-03-11

Sheffield, England.

Names of Bee-Keepers

TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged in alphabetically (in the largest States), and, although this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a type writer, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly, in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky. 182	N. C. 60
Ark. 130	Kans. 350	New Mex. 56
Ala. 80	La. 38	Oregon 104
Calif. 378	Mo. 500	Ohio 1120
Colo. 228	Minn. 334	Penn. 912
Canada 1200	Mich. 1770	R. I. 46
Conn. 162	Mass. 275	S. C. 40
Dak. 25	Md. 94	Tenn. 176
Del. 18	Maine 270	Tex. 270
Fla. 100	Miss. 70	Utah. 68
Ga. 90	N. Y. 13125	Vt. 200
Ind. 744	Neb. 345	Va. 182
Ills. 900	N. J. 130	W. Va. 172
Iowa 800	N. H. 158	Wash. 128
		Wis. 625

\$50 to California

and return, from Chicago, for *National Bee-Keepers' Convention*, in Los Angeles, August 18, 19 and 20. Tickets on sale August 1st to 14th inclusive; final return limit, Oct. 15th, 1903.

Low excursion rates from San Francisco and Los Angeles to points in California, and to Grand Canyon of Arizona, in connection with a correspondingly low rate up to Chicago, will be made by all lines.

The transcontinental trip via the *Santa Fe* in midsummer, is the most enjoyable of any. It crosses the table-lands of central New Mexico and northern Arizona: average altitude exceeds one mile above sea-level—air pure, cool and bracing. Oil-sprinkled tracks—dustless.

For full information and copy of a beautiful book about the California trip address

F. T. Hendry, **SANTA FE** 151 Griswold St.
Gen'l Agt. Detroit, Mich.

Comb Honey

Is profitably produced only when several important factors are combined. First, we must have the right kind of bees. We all know that there is not only a vast difference between the different varieties, but also a variation in strains of the same variety. Just which are the best bees for producing comb honey, *why* they are best, and how to secure them, is told in one of the chapters of **ADVANCED BEE-CULTURE**.

When bees of the right kind have been secured, then comes the matter of using the right kind of hives, fixtures, sections, etc., to secure the best results with the least labor; and **ADVANCED BEE-CULTURE** has a chapter on "Hives and their Characteristics;" and another on "Sections and their Adjustment on the Hives."

Bees may gather large quantities of white honey, and be so managed as to put very little of it in the sections; or they may be so managed that nearly all of it will go into the sections; all of which is explained in one of the chapters of **ADVANCED BEE-CULTURE**.

Comb foundation costs money. Notwithstanding this, its use is very profitable at some times and in some places. Under other conditions it worse than wasted. Read **ADVANCED BEE-CULTURE** and learn *why*.

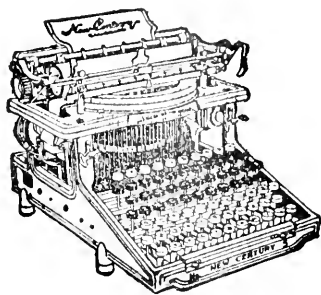
ADVANCED BEE-CULTURE is a book of 32 chapters, describing the most advanced methods of bee-keeping from the beginning of the year through the entire season.

Fifty cents is the price of the book; or it and the **REVIEW** for one year will be sent for \$1.25.

W. Z. HUTCHINSON, Flint, Mich.

The *New Century* Caligraph

does the **BEST WORK** and lots of it
EASILY.



STRONG, THOROUGHLY BUILT,
Superior in results to any other.

Write for
"The **BOOK** of the **NEW CENTURY**."

AMERICAN WRITING MACHINE CO.
343 Broadway, N. Y.

DETROIT SALES OFFICE, 819-821 MAJESTIC BLDG.

Standard Italian Queens

Of the Very Highest Grade,

Bred in separate yards, from superior stock of Golden and Leather Colored strains selected from among the best stock of Long-Tongue Clover and honey queens in America; bred by us with the greatest care, for business. We rear all queens sent out by us, from the egg, or just-hatched larvae, in full colonies. If you want to know what we have, and what we can do in the way of fine, large prolific queens, just give us a trial order. Prices: untested queens, before July 1, \$1.00 each; 6 for \$5.00; 12 for \$9.00. After July 1, 75 cents each; 6 for \$4.00; 12 for \$7.00. Special rates by the 100. Safe arrival and satisfaction guaranteed. Send for circular. It is free. T. S. HALL, Jasper, Ga.
6-03-11

\$QUEENS - \$BEES - NOW.

A. L. SWINSON, Queen Breeder, furnishes best to be had in U. S. **First-handed** warranted queens, \$1.00. Tested \$1.50. Breeders, \$5 to \$10. **American Albino Italians**, and **Adels** mated to **Albinos**.

SWINSON & BOARDMAN,
Box 358, Macon, Ga.

Please mention the Review

Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-25, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. They have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902.

Mr. Atchley, Sir—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 140 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm each stored 28 pounds of honey; so you see I have 11 colonies from one, and 56 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen or heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 56 pounds of honey. If any of you scientific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I want no better. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3-and 5-banded Italians, Cyprians, Albinos, Holylands and Carniolans, bred in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$9.00 per doz. All other months, 75c each \$4.25 for six, or \$8.00 per doz. Tested queen, of either race, from \$1.50 to \$3.00 each. Breeders from \$3.50 to \$10.00 each. 1-2 and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY
P. O. Box 79, Beeville, Bee Co., Texas

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co.
Sheboygan, Wis.

PROVIDENCE QUEENS PROVE THEIR QUALITIES.

The product of twenty years careful and painstaking breeding. Contain the blood of the finest races known. They are hardy, active, long lived, strong flying bees, developed under the trying conditions of New England climate. Unexcelled honey gatherers.

Warranted queens \$1.00,
Tested queens - \$1.50.

LAWRENCE C. MILLER,
Box 113, Providence, R. I.

5-4t

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

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Back Numbers

Of the Review needed to complete our file are as follows: Jan. 1889; Jan. 1890; March, August 1891; Feb. 1893; Sept., Nov. 1898; May, Sept. 1899; Feb., Nov., Dec. 1900. Any one having any of these issues that they are willing to dispose of will please address WILMON NEWELL,
College Station, Tex.
2-03-61

Please mention the Review.

The Choice of Tested Queens

By return mail, \$1.00 each.

Three-banded Italians, from the best imported and home-bred mothers. Every bee-keeper knows that these are the best best honey gatherers. If you want strong colonies and full supers, try our queens, you will not be disappointed. Safe arrival and satisfaction guaranteed. Tested queens \$1.00 each, untested, 75 cents, \$8.00 per dozen.

J. W. K. SHAW & CO.
5-03-tf Loreauville, La.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross
Shipped from New York or from factory.

Send for catalogue to

J. H. M. COOK, 62 Cortland St., N. Y. City

Please mention the Review.

BEEES FOR BUSINESS.



One of the most prolific queens I ever owned was imported by the U. S. Department of Agriculture, from the province of Bergamo, Italy, during Sept. 1901, and sent to me to be tested. In all my experience I have not seen more or better bees for business produced by a queen. A nucleus formed with this queen, one comb of brood and enough bees to cover three combs—filled a 10-frame hive in 30 days with brood and honey, this year, and with the same treatment filled the hive and stored forty lbs. of surplus honey last season. Swarms headed by her daughters and hived on 10 drawn combs, completed 56 sections in 15 days, capping them smooth and white, and are at this writing (May 21) working vigorously on the second lot.

Daughters or grand-daughters of this queen will be mailed promptly for \$1.00 each, or \$9.00 per doz., and the best golden queens for the same price. Money order office Warrenton.



W. H. PRIDGEN,
Creek, N. C.

7-21

Please mention the Review.

We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest

Send for Catalog

MINNESOTA BEE-KEEPERS' SUPPLY MANUFACTURING CO.

Charles Mondeng, Prop.

Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

Adel Queens and Bees.

All my Queens are reared by the good old-fashioned system—the way they were reared when all queens lived three years—the bees stored lots of honey and gave such great satisfaction. These Queens are large, hardy, and reared from the best honey-gathering strain I ever saw. Queens not coming up to above guarantee replaced or money returned.

One queen, \$1.00, 3 queens, \$2.75; 6 queens, \$5.00; 12 queens, \$9.00. My new book on Queen-Rearing given to all who purchase three or more queens. Send for Catalog.

HENRY ALLEY,

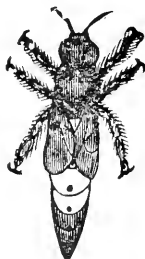
7-11

Wenham, Mass.

Phacelia Tanacetifolia, the great Honey and Forage plant, can be planted any time, while there is moisture. It blooms 6 weeks after sowing. Seed, 1 ounce 25 cts. postpaid.

6-03-21 O. LUDENDORFF, VISALIA, Cal.

Tennessee Queens



Daughters of Select Imported Italians. Select long-tongued (Moore's), and select, Straight 5-band Queens, bred $3\frac{1}{2}$ miles apart, and mated to select drones. No bees owned within $2\frac{1}{2}$ miles; none impure within 3, and but few within 5 miles. No disease, 30 years' experience. Wanted queens 75c each; tested, \$1.50 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

QUEENS!

I wish to say to my old customers that I am prepared to ship three-banded Italian queens promptly, and will guarantee them equal to those I have sent in the past. To those who have not tested my queens, I would say give them a trial beside the long-tongued, red-clover double-breasted strains, and see for yourself where lies the difference, if any. Price 75c each.

JAMES F. WOOD,

North Dana, Mass.

7-21

WANTED:

Extracted Honey.

Mail sample and state lowest price delivered at Cincinnati. Will buy *Fancy White Comb Honey*, any quantity, but must be put up in no-drip shipping cases.

C. H. W. WEBER,

11 2146-48 Central Ave., Cincinnati, Ohio.

Please mention the Review.

Good Queens at Low Prices.

If it is queens you want, why, send direct to the NEW CENTURY QUEEN REARING CO., and get a queen any day, of any race, fresh from the moulds. Untested, of any race, 50c each; 3- and 5-banded Italians, tested, 75c each, all other races, \$1.00. We have an entirely new system by which we rear queens, which explains why we can offer them at such low prices. Send for circular.

NEW CENTURY QUEEN REARING CO.,
2-03-11 Berclair, Texas.

Please mention the Review

Victor's Superior Italians

Go by Return Mail, and are Guaranteed to Give Satisfaction, or Money Refunded.

I am ready with the same old true and tried stock of Italian queens and bees as of old. My queen-mothers in yards No. 1 and 2 are serving their fourth year in that capacity, 1900-1903. Their daughters have pleased The A. I. Root Co., W. Z. Hutchinson, O. L. Hershiset, G. M. Doolittle, R. F. Holtermann, F. B. Simpson, and many others prominent in apiculture. In fact, every customer has been pleased as far as I have heard. I COULD FURNISH HUNDREDS OF THE VERY STRONGEST TESTIMONIALS, but space forbids. Practically all the queens that I have sent from these yards were daughters and grand daughters of the two "Oil Wells," as we often call them. Untested queens, \$1.00 each; select untested, \$1.25 each; tested, \$2.00; breeders, \$3.00 to \$7.00. Send for illustrated price list.

W. O. VICTOR, QUEEN SPECIALIST WHARTON, TEXAS

Bee-Keepers

It is a conceded fact that the bulk of the honey of the future is going to be produced in the irrigated portion of what is known as "Arid America." If you are interested in the progress of apiculture in this vast region, you should subscribe for the

Rocky Mountain

Bee Journal,

a twenty-page monthly; price 50 cents per year.

This is now the only bee publication west of the Missouri river. We have several hundred eastern subscribers, and have still room for more. Write for free sample copy. Address

H. G. Morehouse

Boulder, Colo.

The Bee-Keepers' Paradise.

300,000 Acres of Wild Land for sale, in the famous Fruit Belt Region of Michigan, at low prices and on easy terms.

These lands are especially adapted to fruit culture, all the most desirable fruits being cultivated with especial success.

These uncultivated lands also produce immense quantities of wild berries, from which large crops of honey are obtained, at a good profit to the Bee-Keeper.

Write for particulars and circulars.

"No trouble to answer letters."

Address:

J. E. Merritt,
Gen'l. Mgr.

Michigian Land Co.,
Manistee, Mich.

ROOT'S GOODS

At Root's Prices

Pouder's

Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

WALTER S. POWDER

512 Mass. Ave.

INDIANAPOLIS IND.

Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, because it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation for cash

a specialty. BEESWAX ALWAYS WANTED at highest prices. Catalog giving

Full Line of Supplies

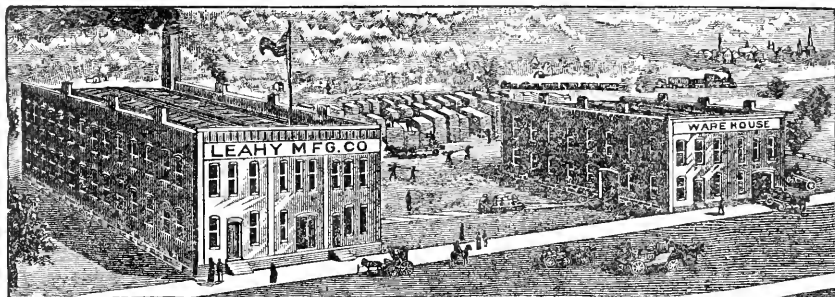
with prices and samples, free upon application. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin

E. Grainger & Co., Toronto, Ontario, Sole Agents for Canada.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price; only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,
JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N. H., can send you a list of our goods and prices. Order of him and save freight.

No Fish-Bone

Is apparent in comb honey when the Van Dusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Dusen *wired*. Send for descriptive list, prices, etc., on application.

Van Dusen Bros.,
Brooklyn, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

6 Years

This will interest you.

DULUTH, Minn., April 24, 1903.

Please send me a box of **Yellowzones** for the enclosed \$1.00. We have used this remedy, now, for six years and have increased the scope of their use until this is about the only remedy we make use of.

(Rev.) S. C. Davis.

This I have always claimed—that the more you know of

YELLOWZONES

and the longer you use them the better you will like them. And, further—that they are *Absolutely Unequalled* as a general household remedy. Just read that testimony again. A man doesn't send his dollars time and again, year after year, for the same remedy unless he's getting *mighty good results!* You know that. 100's of substantial beekeepers have been my customers just as long as he, and their kind words and *continued patronage* tell the same story.

If you keep but One Remedy in the House it should be YELLOWZONES.

\$1.00 per Box of 150 Tablets.

Trial size 25 cents.

Your money back, and *Another Box* if not satisfied.

W. B. House, De Tour, Mich.

Please mention the Review.

QUEENS!

I wish to say to my old customers that I am prepared to ship three-banded Italian queens promptly, and will guarantee them equal to those I have sent in the past. To those who have not tested my queens, I would say give them a trial beside the long-tongued, red-clover double-breasted strains, and see for yourself where lies the difference, if any. Price 75c each.

JAMES F. WOOD,
North Dana, Mass.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holly Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

SPECIAL ADVANTAGES FOR THE MANUFACTURE OF BEE SUPPLIES.

RIVER FALLS, Wis., April 28, 1903.

W. Z. Hutchinson, Flint, Mich.

Dear Sir: On March 17 we had a severe flood. My old mill dam, which has stood for 35 years, gave way, and I was obliged to remove it entirely. I purchased a power immediately above, and am now engaged in erecting a 26 foot dam which will make a total fall of 50 feet, and supply water-power for the greater part of the year in excess of 100 horse-power. I will enlarge the hive department, and put in some new labor saving machines, which, together with cheap power, and cheap lumber, and the best help I can secure, will, I hope, enable me to build up one of the finest Bee Supply Factories in the world. I aim to supply the Western trade, and it is plain to see that I have natural advantages which my friends in the East do not have, and can never enjoy. We will be running again within a month, and look for patronage from old and new friends.

W. H. PUTNAM

5-03-tf

River Falls, Wis.

FOR SALE—100 Colonies of Leather Colored Italian Bees. A tested Queen in each Colony. In Dovetailed Hives. Price, after July 15 and during August, \$4.00 each; in lots of 10, \$3.50 each.

F. A. GRAY,
REDWOOD FALLS, MINN.

Please mention the Review.

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If the advertising that I have been doing the past three years has not convinced you that the Superior Stock that I have been offering for sale is really superior, then it is the fault of the advertising, for the stock is really all that I claim for it. I have guaranteed safe arrival, safe introduction, purity of mating, and satisfaction to the extent that a queen may be returned inside of two years, and the money will be refunded, together with 50 cts. to pay for the trouble. No other breeder makes any such guarantee. I have sold hundreds of queens under it. I do not know of a single dissatisfied customer, while I have dozens of letters from men telling of increased results from the introduction of this stock, and asking: "Can I get any more queens of you like the one I bought two years ago?"

Although the price of these queens is \$1.50 each, I have never been able to keep up with the orders. Most of my customers wait until spring before sending in their orders, and then have to wait from four to eight weeks. A few are far-sighted enough to send in their orders in the fall or winter, and these get their queens in May or June, in time to be of some service to them the same year. Send \$1.50 now and I'll book your order, and you will get your queen early in the season.

The price of a queen alone is \$1.50, but I sell one queen and the Review one year for only \$2.00. When you send in your renewal to the Review, send another \$1.00 (\$2.00 in all) and your subscription will be put ahead one year and your order booked for a queen.

W. Z. Hutchinson, Flint, Mich.

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Go by Return Mail, and are Guaranteed to Give Satisfaction, or Money Refunded.

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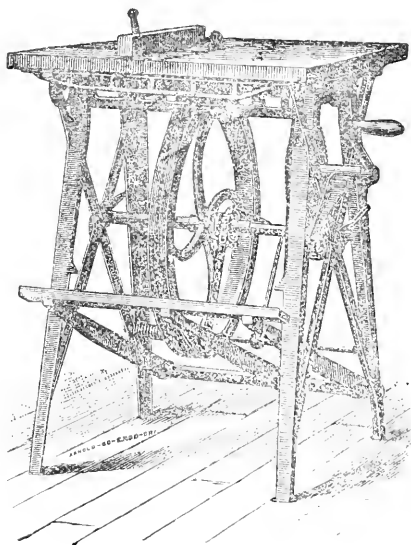
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The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

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LOSING UP THE SEASON TO THE BEST ADVANTAGE. BY JAS. A. GREEN.

The approach of the close of the honey season is a time of importance to the producer of comb honey. He is anxious to secure as much honey as possible, so he is apt to put upon the hives a great many sections that will never be filled. We all know that this is very undesirable, though a great many appear never to have learned just how much of a loss and a waste it is. How it may be prevented or reduced as largely as possible is the question to be considered.

THE FOLLY OF TOO MUCH ROOM.

The first method is that of lessening the surplus room. This is a very good plan to follow if judiciously pursued, but if carried too far, or a mistake is made in the probable duration of the honey flow, it may result in a serious curtailment of the season's crop. Yet, to go ahead full swing, giving empty supers as if it were in the height of the honey flow, will almost as certainly bring loss in the shape of damaged sections and wasted time under ordinary methods of procedure.

To my mind, a medium course is better. I would gauge as carefully as possible the storing strength of the colonies and the probable duration of the flow, neither contracting unduly or giving room recklessly.

MASS THE UNFINISHED SECTIONS ON THE BEST COLONIES.

I would go over the hives as often as possible, removing a super whenever a fair proportion of the sections was completed. Partly finished sections should be massed on those colonies that will be most likely to complete them. This precaution will very largely reduce the number of sections nearly or quite filled but not completed, which is what makes this matter of unfinished sections so aggravating. Besides, if the flow comes to a sudden end, you have these sections in good shape to be promptly finished by feeding back.

A SUPER ON TOP SHOULD BE SIMPLY A TEST TO SEE IF ROOM IS NEEDED.

As to the practice recommended by some, of putting the last supers on top, instead of beneath the partly finished ones, it has some points to commend it, but on the whole I am against it. It will often reduce largely the

amount of honey stored in the sections, and by delaying the start in the new super, will sometimes actually increase the number of sections left unfinished. A modification of this plan that I rather like is to place the new super on top, and, if the bees occupy it in numbers sufficient to show a likelihood of good work in it, place it below as usual. Twenty-four hours is amply long enough to leave this super on top, and, usually, a much shorter time is sufficient to determine whether the bees really need more room or not.

Now we will suppose that the end of the season has come, and that, in spite of our efforts, there are still a number of uncompleted sections. The first thing to do is to get them off the hives as soon as possible and sorted over so that you can see just how many you have in the various stages of completion. How many grades you are to sort them into depends upon what use you are to make of the unfinished ones. After sorting out all that are marketable, I usually put the rest into three classes.

First, those that have no honey in them. Second, those that are less than half finished. In the third class go all that are above this.

The first are stored away carefully so that no dust can get at them. The supers containing the second class are carefully piled up out of doors so that the bees can get at them through a small opening admitting only one or two bees at a time. As soon as the bees have about all the honey out, free access is given to the pile and they are left until the bees are entirely done with them, when they are stored away for use the next season as bait sections.

The sections that are nearly finished are completed by feeding back. This is something that I think very few

beekeepers are as well acquainted with as they ought to be. Feeding back to complete sections that are nearly finished can be made very profitable. For the details of this, I know of nothing that covers the subject so well or completely as what the editor of *The Review* has written in his "Advanced Bee Culture." But to epitomize the essentials, I will say that to make a success of feeding back one must have strong colonies of bees that show an adaptability for this work. Bees differ greatly in this respect and you cannot always tell, without experimenting, if any colony is suited to this work. There must be a contracted hive, with all the combs completely filled with brood or honey. The honey should be thinned considerably and fed rapidly. I greatly prefer a feeder made to go underneath the hive so that all the work of handling the honey is exactly the same as if the bees were getting the honey from the fields. Feeding back can be most successfully done when the weather is hot. When the honey flow is cut short by cold weather, as has almost always been the case in my apiaries, it is much more difficult to feed profitably, but by prompt work, even at such a time, a handsome profit can be made out of what would otherwise but poorly pay for the labor.

USE BEE ESCAPES.

Getting bees out of the sections sometimes presents quite a problem when the honey flow is cut short by cool weather. I take off almost all honey by means of bee escapes, using an escape that I invented years ago and called the "Utility." This is made in a board, using two horizontal wire cloth cones. While not quite so positive in its action as the Porter, it is more rapid and works better in cool

weather. When the weather is too cool, though, escapes cannot be used. Sometimes a cool morning will permit the removal of a great many supers without any bees in them. At other times, by selecting the warmest time of the day, the bees may be shaken out very successfully. For this purpose Rambler's "joumeer" is very valuable, but must be carefully used or it will break out the combs. Sometimes nothing can be done except to take the supers apart and brush the bees off.

ADVANTAGES OF PRODUCING BOTH COMB AND EXTRACTED HONEY IN THE SAME APIARY.

All of the foregoing applies to apiaries that are run entirely for comb honey. In my own practice, I use methods that much more largely reduce the number of unfinished sections. I always prefer to combine the production of comb and extracted honey in the same apiary, which "Combination Method" I have at various times in past years urged upon bee-keepers at conventions and in the bee journals. My extracting combs are in shallow supers, with fixed frames which are never handled separately until they they come to the extracting room. Of the many advantages of this system I will mention only those that have a direct bearing on the subject under discussion. At the beginning of the season, instead of coaxing the bees into the supers by bait sections, or waiting until they are crowded into them, a super of extracting combs is given, to be replaced by sections as soon as the bees are well started at work, or left to be finished, as circumstances may dictate. This obviates the necessity of "bait sections," which I use to only a limited extent, and so removes one of the things that make many look with more or less complacency on a

number of unfinished sections in the fall.

As the season draws to a close, instead of giving sections that may never be filled, I give a super of extracting combs, especially to the weaker colonies, and use every effort to have the strong colonies finish up all sections that have been started. As these strong colonies finish up their sections, instead of giving them fresh ones, the sections are taken from the weakest, or rather the poorest working colonies, and given to those that are doing more rapid work in the supers. By carefully working this method I have succeeded in reducing the number of unfinished sections, in an apiary run almost altogether for comb honey, to an average of only a little more than two per colony, and every colony had at all times plenty of storing room. An extracting super, half full of honey, is nearly as good, except for the amount of honey, as a full one, while a super full of half filled sections is an expensive nuisance. Let it be remembered, too, that a colony will do fairly good work storing honey in extracting combs at times when it would do little or nothing at working in sections.

Grand Junction, Colo., July 10, 1903.



EDUCATION AND CO-OPERATION ARE THE NEEDS OF CALIFORNIA BEE-KEEPERS. BY J. M. HAMBAUGH.

San Diego County, California can boast of a greater variety of bee-keepers, and has more modes and methods than any other county in the United States. There are those whose center tables are adorned with the latest bee periodicals and whose shelves contain up-to-date text books and bee literature; and we have as loose, slip-

shod, any-old-way class, as can be found the world over.

Could I get together the many crude and varied methods with which I come in contact during my rounds of inspecting, I could install a veritable curiosity shop. From the accurately cut factory hive, to any old box, with no frames, or, possibly, frames (as per Ernest Root, in *Gleanings*) cut with a hatchet. I find apiaries that are models of convenience, and equipped with the most modern appliances, and others that bear the impress of a cast-off rubbish pile. Their owners never saw a bee book or periodical, and the limit of their knowledge is to rob the bees, when the opportune time comes.

IGNORANT PEOPLE OUGHT NOT TO BE
ALLOWED TO KEEP BEES, ON ACCOUNT
OF FOUL BROOD. BEE KEEPER'S
SHOULD BE LICENSED.

Of course this is a free country; and it is said, that "Where ignorance is bliss it is folly to be wise," but it does seem to me that this class of would-be-bee-keepers are a menace to the pursuit, and that by some means there should be attached to it educational features which a person must acquire, ere he can enlist in its ranks; especially here in California, where the climate is so well adapted to the propagation of disease germs, chief among which is that of foul brood.

Having had several years experience in the treatment and cure of this disease, I think I am correct in making the statement that, wherever it exists to any extent, it is simply the offspring of ignorance; and no one that is not familiar with the nature and care of this and kindred diseases should be allowed to keep bees.

It would not be so much consequence if the mischief wrought were confined to the untutored individual alone, but unfortunately, in many instances they are the source of others' misfor-

tunes. One instance I will mention: A certain Mr. A. purchased, in an adjoining county, an apiary consisting of over 100 colonies of bees. Soon after their delivery the purchaser discovered that they were diseased, and, in the course of a year or so, many died. In the fall of the following year a widow (Mrs. B.) moved twenty-three colonies within a quarter of a mile of this diseased apiary.

During the winter and spring following, Mr. A's bees died very rapidly, and their hives proved an excellent decoy or death trap for the innocent widow's bees. When I arrived, six months from the time they were moved in, 19 colonies out of the 23 were in all stages of foul brood. Mr. A's bees had dwindled to 35 live colonies, 33 of which were found diseased, many being simply rotten. I also found neighboring apiaries, within two or three miles, more or less afflicted, and so it is in every instance where this disease is allowed uninterrupted sway through an ignorant or careless bee-keeper. California's foul brood law, however, makes it a misdemeanor for a bee-keeper to maintain a foul brood apiary. When notified by an inspector to abate the nuisance he is obliged, under penalty of the law, or destruction of his bees, or both, to abate the same; but, if we had a qualification feature in our law, there would be little or no use for inspectors and stringent laws.

It is evident to an observant mind that co-operation is the order of the day, and we are asking, is the idea feasible? Have we sufficient grievances to justify co-operation as a defence to our pursuit? Can we maintain a central organization, for appropriate distribution, and obtain individual benefits sufficient to justify the same? I think we can. The honey producers by the very nature of their environments have been at the mer-

cy of the bears and speculators, and in many instances, they have simply been fleeced and compelled to sell their hard-earned product for less than the cost of production. The most deplorable feature of the business is the grinding down of the small producer. He that is the most needy, by the nature of circumstances, has been ground the closest, while the large producer, and those best able to stand financially, have been able to secure better prices.

HOW LOW PRICES ARE ESTABLISHED.

Here is one of the common methods used, and one which frequently establishes the price in a community. A bee-keeper who depends largely on his honey product for a livelihood, (and there are many such in Southern California), is compelled to run grocery bills and other accounts, and he is under obligations to his creditors to meet the same with the proceeds of his bees. The harvest comes, he hauls his first product to the market, and offers it for sale. The honey merchant, or commission man, treats the seller with cool indifference. His plea is: "No market. Too soon!" His indifference is only equaled by his eagerness to know the lowest figures that will buy the honey. The poor bee-keeper, through necessity, puts the price down to ruinous figures. The honey merchant becomes very philanthropic; he purchases the honey, we will say, for $3\frac{1}{2}$ cts. per pound. The next bee-keeper who hauls his honey to market is informed that they are paying $3\frac{1}{2}$ cts per pound for honey; and thus the market is established in that vicinity.

THE LONG STRING OF MIDDLEMEN.

The interior merchant frequently has a mortgage upon the producer's product, and he is, in a manner, compelled to sell his honey, at said merchant's own figures. The merchant

sells to a San Diego merchant, the San Diego merchant to a San Francisco merchant, the San Francisco merchant ships his honey, by the carload, to a Chicago merchant, the Chicago merchant ships to the jobbing houses, and the retail merchant sells to the consumer; herein we have an aggregation of five or six middle men, that are surely in the business for a profit, which must be paid by the producer.

The object of co-operation, is to keep in direct touch, through our organization, with the consumer, as near as possible, thus saving all unnecessary profits to speculators and middle men. Can this be done? I do not look upon this as a mooted question. We certainly have many precedents in the citrus fruit organization, raisin growers, etc. Our product is by no means perishable, and we only require appropriate laws, rules and regulations, to accomplish results that will be in keeping with kindred organizations. Can it become National? Along the same line of corporation as similar institutions, yes. Let the National Bee-keepers' Association at Los Angeles, in August, bring this matter up, and discuss the various methods. The California National Honey Producers' Association is already incorporated, and, from all appearances, will do very effective work this season. Its fitness and deserved confidence of the National idea remains to be seen. Let us have light.

San Marcos, Cal., July 6, 1903.



LOSE THE SEASON BY
KEEPING IN VIEW THE
FUTURE. BY M. A. GILL.

In all the problems of life "The Now" is the opportune time, and perhaps there is no better way to make it best subserve our interests than in

using it to prepare for the future; and in closing the honey season, perhaps the paramount thought should be to close it in such a way, that we will be best prepared for the future; remembering, always, the better the condition our bees are placed in in August, the better they will winter; and the better they winter, the better (as a rule) will be our crop next season.

In order to secure these conditions, every colony should be provided with a laying queen, or else broken up, and the stores used where they will do the most good. Now is a good time to do some sensible equalizing; and all nuclei and weak colonies should be given enough nurse bees so that every queen can close the breeding season doing her very best.

GIVE UNFINISHED SECTIONS, INSTEAD OF EMPTY SUPERS TO STRONG COLONIES.

With regard to the manipulating of the surplus arrangement in this locality, all medium colonies should be reduced to one super from a week to 10 days before the close of the honey season. All supers should be removed from colonies that are making no progress in them, or show a disposition to remove honey from the outside combs. When the honey is being eased, all of the best of the unfinished sections can be placed in supers by themselves, and marked "go backs;" these can be placed upon the most powerful colonies (those that have finished their work or nearly so) to be finished up as No. 2 honey. Thousands of pounds that are extracted or sold as cull honey, could be so finished if given to good strong colonies instead of giving them an empty super of starters at or near the close of the season. I say No. 2 honey, as at least 60 per cent of it would be No. 2, because a good strong colony will do better work, even near the close of the season, than a much weaker one

in the main flow, hence the sections are more or less ridged at the place where the strong colony began work, and are better filled at the lower end. While the weight may be good, the attractive appearance has been spoiled.

Now comes a critical time with the operator, for he does not care to strip his apiaries until he has secured about all the surplus possible, yet he should have all supers off just before the close of the honey flow; not only because he will have more finished honey than he would if he left it on for a few days after the flow has entirely ceased, but because it is much more pleasant to finish up work with the bees; besides, it leaves the apiaries in a quiet condition at the close of the season and without any tendency to rob. As the last supers are removed is the time to secure some nice drawn combs for next season's bait combs if one desires to do so.

GETTING "BAIT SECTIONS" FOR NEXT YEAR.

Perhaps 30 to 40 per cent of the colonies, when the last super is removed, will have their honey all sealed and be in such a condition that they will completely fill with bees an empty super (furnished with starters) and draw the starters out to one-half depth comb in 48 hours. Now I trust no one will put on a lot of supers and leave them on all through the Autumn to be gnawed, and yellowed, and spoiled, but if it is done at all, remove the supers of nice drawn combs before they are spoiled.

A physician in writing his prescription for us to take medicine by always says "take as indicated" and I always think this a good suggestion with regard to our work in closing the season "do as indicated."

Longmont, Colo., July 20, 1903.

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Terms—\$1.00 a year to subscribers in the United States, Canada, Cuba and Mexico. To all other countries postage is 24 cts. a year, extra.

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Flint, Michigan, Aug. 10, 1903

Aster honey for winter stores usually results in disaster.

Formaldehyde is spoken of encouragingly by Mr. N. D. West, in a report to Gleanings. Mr. West is one of the State Inspectors of New York, and says he believes that formaldehyde is going to prove a boon.

The next Review will probably be a little late, as the result of its editor going to the California convention. He expects to spend some little time photographing and writing up California bee-keeping.

Mr. John Quincy Smith, of Lincoln, Illinois has been appointed Inspector of Apiaries for Illinois. Judging from my acquaintance with Mr. Smith, made as a brother exhibitor at several of the Illinois State fairs, Mr. Smith will be an excellent officer.

In sending small amounts of money to England, don't use United States coins, but send, instead, postage stamps. Mr. John Hewitt, whose ad-

vertisement appears in the Review, sends me this advice. He says that American coins do not pass current in England, while postage stamps can be sold at slight profit.

Vinegar rubbed on the hands will prevent the bees from stinging them unless the bees are terribly irritated. Mr. Ira D. Bartlett, of Northern Michigan, told me recently that a man had told him that such was the case, and he found, upon trial, that it greatly lessened the number of stings on the hands.

M. H. Mendelson, of California, writes me that their new commercial organization out there is proving a success; that the best men are going into it, and acting unselfishly, and that the output of the State is practically under the control of the Association. Perhaps it is well that California has not a large crop this year, as a small crop is more easy to control than a large one. Next year there will be more experience.

White Clothing in the apiary saves the wearer some annoyance and stings. I was in an apiary recently, wearing a black veil, while my two companions wore white veils. The way the bees "pitched" for my veil to the neglect of the others, was a caution. I found one bee-keeper this summer who wore white clothing throughout. A white shirt, white duck trousers, and a white duck hat. This color of clothing is cooler, and seems to be much less offensive to bees than black.

Father Langstroth described "shook swarming" in his book, but it seemed to be one of those discoveries that must be re-discovered. The conditions at that time were different. Probably

an out-apiary had not been dreamed of when Langstroth wrote his book. It possessed no apparent merit over other methods of artificial swarming. With the establishment of out-apiaries came the necessity for some method of controlling swarming, and "shook swarming" was re-discovered along with its value.



The Headquarters for bee-keepers at the Los Angeles convention will be at the Natick House, Corner First and Main Sts. Let no one forget that the social feature is the most enjoyable part of the convention. These little chats between the sessions, at the table and in the hotel office, where all restraint and conventionalism are thrown aside, allow us to form new acquaintances and renew old ones in a way that could not be done if the members were scattered all over here and there. Let us all go to the Natick, where everything is strictly first-class. On the American plan the price is from \$1.25 to \$3.00 per day. On the European plan, from 50 cts a day up.



"An apiary for each day in the week may be all right for Mr. Gill, but it won't work here, where it sometimes rains every day for a week. Out in Colorado, where it does not rain, it may be all right, but here in Michigan, we must have more lee way." This is about one of the first things that Mr. E. D. Townsend fired at me when I visited him this summer. This goes to illustrate that a man must thoroughly understand his locality and its peculiarities. An apiary for each day in the week is all right for Colorado where it seldom rains, but in Michigan some provision must be made for the rainy spells. There must be fewer apiaries, or else enough help to visit several apiaries the same day when it stops raining.

In bottling honey for market, there is an advantage in doing this early in the season, before it shows any tendency to granulation. So great a degree of heat is not needed, to prevent granulation, and it is not necessary to keep it hot so long. I recently visited Mr. Ira. D. Bartlett, of East Jordan, Michigan, and found him bottling honey of the present season's crop. He heated it to 150 degrees, sealed it up at once, and said that past experience had proved to him that honey so treated would not granulate during the coming winter.



The beeswax that is wasted in this country is something enormous. The State inspector of apiaries sees enough in this direction to make his heart ache. Some farmer-bee-keepers pay scarcely any attention to saving wax. If colonies die during the winter, the hive and combs are left standing for the bee moth's larvae to eat up. Yes, it does sometimes seem as though the hives themselves were pretty nearly eaten up—on the inside.

I have seen as many as 30 hives lying about the yard, in all positions, filled with moth eaten and rotten combs. "Too busy," was the excuse; and I think it was a true one. But why keep bees if there isn't time to care for them? If there is one lesson that is sinking deep into my heart as the result of my observations while working as inspector of apiaries, it is the folly of trying to do too many things. Do fewer things and do them better.



Odor or scent may or may not play an important part in the introduction of a queen. Mr. Arthur C. Miller thinks not, and his published views on the subject lead Mr. J. L. Lewis, of Pottsville, Michigan, to remark:

"Suppose a queen is taken from her hive and dropped into a colony having a laying queen. The bees will at once kill her, and would kill her if left alone. We smoke them off and return her to her own bees. Now, will Mr. Arthur C. Miller explain why her own bees will at once pounce upon her and kill her, the same as any strange queen, unless scent has something to do with it?"

A NOVEL DEFENSE.

"Success" for August contains a graphic account of how a boy in Nova Scotia, in early days, assisted by his mother, some guns, and an apiary, drove away a murdering band of Indians. He saw the Indians in the distance in time to slip out and bring several bee hives near the house, setting them in a circle about the house, about 25 feet distant, and then cutting up clothes lines and ropes, tied them to the hives, bringing the free ends into the house. The reader can imagine the rest—if he can't, let him get a copy of the magazine and read it. It is worth while.

BLACK BROOD AND FOUL BROOD ONE AND THE SAME THING, ACCORDING TO EXPERIMENTS MADE AT CORNELL UNIVERSITY.

Veranus A. Moore and G. Franklin White, of the New York State Veterinary College, at Cornell University, have been making some experiments with specimens of black, pickled and foul brood, and their decision is that black and foul brood are practically the same. I believe that Mr. McEvoy, of Canada, expresses a similar belief, while Dr. Howard, of Texas, from a large number of microscopical examinations, decided that black brood is

caused by a different microbe than in the one causing foul brood. Ernest Root says that the black brood that he has seen, differs in several important respects from foul brood. One comfort regarding the matter is that the treatment is the same, regardless of whether the diseases are the same.

PRINTING PRESS FOR SALE.

Hallack & Hartshorn, the firm of job printers who rent my printing material and print the Review, wish to sell their cylinder press and buy one large enough to print 16 pages of the Review at one time. Their press is a 22x28 Hoe, drum, and probably cost \$800 when new. It was rebuilt last December by Barnhart Bros. & Spindler, and cost \$150 spot cash. It is practically as good as new, and in perfect order, but would be sold for some less than they paid for it. If any subscriber of the Review needs such a press, or knows of any one who does, will he please write to Hallack & Hartshorn, Flint, Mich.

I must beg pardon for putting an advertisement in the reading column, but the idea of making this change came about suddenly, and after the advertising pages for this issue were printed.

WAKE UP TO YOUR OPPORTUNITIES.

A man with a single apiary sometimes has to have his eyes opened pretty forcibly to the opportunities lying about him, before he realizes and improves them. A young man in Northern Michigan had managed a single apiary for several years, with little heed to the grand localities lying all about him. Finally some one located an apiary three miles from him and harvested 8,000 pounds of comb honey the first season—8,000

pounds that this first comer might have had if he had only thought of putting an apiary out there. This opened his eyes, and he is this year managing 250 colonies, in three apiaries, and harvesting more than ten tons of honey. This is the kind of bee-keeping the Review is doing its utmost to encourage—extensive bee-keeping, in a good locality, conducted upon business principles.

KEEP UP YOUR ENTHUSIASM.

Enthusiasm is needed in any business. But little can be accomplished without it. The man who goes to his work with leaden feet, and no interest in his work, is sure to fail. Enthusiasm, well directed, almost insures success. Many a task or enterprise is begun with great enthusiasm, only to go down, as enthusiasm wanes. If only the enthusiasm of the beginning could be kept up, business would hum.

When a man opens a store he has a grand "opening." A brass band is hired, souvenirs and flowers are given away, the floors and windows shine with the polishing that has been given them, the clerks put forward the best foot, page advertisements appear in the papers, etc. After a little the enthusiasm begins to wane, and the store and its management drop back to the common place. What a business a store could build up if this opening enthusiasm could be kept up. The same with a man who buys out a newspaper. The old type and presses must give way to new. Perhaps the building is painted, floors scrubbed and the walls newly papered, etc. Now, why can't the original owner wake up and do these very things just as well as the man to whom he sold? Why can't we all keep up our enthusiasm in our business; keep things up-to-date, and in good trim, and all the time keep improving, just as we

do when we first start in? Why ever lose our first enthusiasm?

LET INGENUITY HAVE HER PERFECT WORK.

A little hard thinking will often help one out of an apparently insurmountable difficulty. While on a trip through Northern Michigan recently, I came across a fine clump of milkweed in bloom by the side of the road. I stopped to photograph it. The trouble was that the wind was blowing hard enough to keep the plants constantly in motion. "If I only had it in a room where the wind wouldn't blow," was what I kept thinking. Then I thought, "If I could only make a room here some way." At last it came. "Take the two spreads out of the carriage, pin them together, thus making a large sheet, have the driver hold up one end and I the other, and keep the wind off these fine flowers in the foreground." No sooner thought of than done. Result, a fine picture.

GETTING BENEFIT FROM NEW BLOOD WITH BUT LITTLE LABOR.

Most of bee-keepers, where they buy queens, feel that they must rear queens from the new queens in order to derive much benefit from them. Mr. S. D. Chapman, of Mancelona, Michigan, has a plan that involves much less labor, and it is likely that he secures equally good results—perhaps better. He buys several queens of the best breeders, and introduces them to good colonies in his apiary. Instead of rearing queens from them, he furnishes their colonies with an abundance of drone comb, restricting its use in all of his other colonies. The result is that a large number of his queens are mated to drones of the new stock; and it is generally conceded

ed that the influence of the male parent is fully as great, perhaps greater, than that of the female. It will be seen that Mr. Chapman gets about as much benefit as it is possible to get from the introduction of new blood, and that, too, with very little labor.



HOW BEES FEED ONE ANOTHER.

While talking with Mr. A. D. D. Wood recently he called attention to Mr. Arthur C. Miller's assertion that bees never offer food to a queen, nor to one another; that it always has to be asked for, and sometimes almost taken by force. Mr. Wood then asked how I supposed a queen caged in a hive, with no food in the cage, managed to survive for days and weeks? She would have no opportunity to take food from the bees by force—it must be offered to her. He then mentioned the case of a colony of bees, nearly all the members of which were apparently lifeless from starvation. If a few of the bees are still able to crawl, they will take food and distribute it to those who are too far gone to ask for food, much less take it by force. Eventually, nearly every bee will be revived, if they have not been starved too long, and that because the few that are able to move feed the others.



OVERSTOCKING—CAN IT BE ACCOMPLISHED WITH LESS COLONIES WHEN

WORKING FOR EXTRACTED

HONEY.

Can more bees be kept in one locality when worked for comb honey than when worked for extracted? Perhaps this question has been discussed before, but I do not remember having seen anything on the subject. In producing comb honey there must be some work done in drawing out founda-

tion, or combs built if foundation is not used, and the combs must be more completely sealed than is usually the case when extracted honey is produced. In other words, comb honey is more of a finished product, while extracted honey is more like the raw material. It requires the work of some bees to work this raw material into the finished product, hence, some bees that might go to the fields are kept at home doing house work. In other words, a comb honey colony can not send so many workers into the field, hence more colonies may be kept when comb honey is being produced. This is one view of the subject; another view is that the inside work of the hive is done by workers that are too young for field work, workers that would be idle if there were no comb to build or honey to cap, that is, idle except for the feeding of the brood. Which line of reasoning is correct?



GET INTO A GOOD LOCALITY.

A good bee-keeper can make something of a success in even a poor locality. He can start out-apiaries, and, by keeping a lot of bees in this way, make something of a success, but how much greater would be his success if he were only in a good locality. Perhaps an old man, or even one of middle age, one who has settled down, and has his old-time friends and neighbors about him, one who has almost become a part of that locality, ought not to be expected to wrench himself away from friends and associations, and pitch his tent in the wilderness, figuratively speaking, but the young man who expects to follow bee-keeping for a livelihood, certainly ought to take time and pains to find and locate in an excellent locality for his business. There are localities in which it is almost impossible to make a living at keeping bees, and there are

localities in which at least a fair crop may be expected each year, and a good crop in most of the years, with very few, if any, total failures. Some of the Western States and Territories, those blessed with irrigation and alfalfa, offer such fields. Colorado is an example. Northern Michigan, with its thousands of acres of red raspberries coming in as the timber is cut off, will be a paradise for bee-keepers for many years to come. I think it would be well if the bee journals and their subscribers and readers would turn their attention to this matter of finding and exploiting good locations. A man in a good location need not fear to tell of it for fear others will crowd in. As a rule, a man who has enough enterprise and energy to seek some distant location, possesses too much sense to crowd close to another apiary. It is suicidal to both.

OBJECTIONS TO SELF-SPACING FRAMES.

Self-spacing frames are something that I can see little use for in a permanently located apiary. If bees are to be moved about from one yard to another, the self-spacing frames have the advantage of being all ready for moving at any time. So far as handling combs is concerned, I prefer those that have no projections whatever—just a plain, all-wood, 7 $\frac{1}{2}$ -of-an-inch frame. With this there are no dummies to be pulled out—something that can sometimes be accomplished only with infinite pains and labor. The lateral movement is something that is instantly available with the plain, un-self-spaced frame. We have only to pry one frame over a little in one direction, another in the opposite direction, loosen the frame between them and lift it out. Self-spaced frames may save a little time in adjusting the frames preparatory to closing the hive, but it sometimes hap-

pens (although it is against the rules) that combs are not exactly uniform in thickness or contour, and it is desirable to be able to adapt the spacing to the irregularities of the combs, which cannot be done with self-spacing combs.

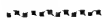
When combs are used in the extracting supers, they are placed farther apart than in the brood nest, which upsets any spacing arrangement that is adapted to the latter locality. Projections, nails, etc., are objectionable when it comes to uncapping and extracting. Taken all in all, I am decidedly opposed to self-spaced frames.

ADVERTISING AND SELLING HONEY IN A MAIL ORDER WAY.

Almost all kinds of merchandise are now sold by advertising and getting orders by mail. Why not sell honey in this way? It might not be feasible to sell comb honey in this way, on account of the liability of breakage; but extracted honey, put up in a small jacketed tin can, one holding about ten pounds, and retailing for \$1.00, is a proposition entirely feasible. Perhaps ten pounds is too large a quantity to sell, package and all, for \$1.00, but I would make the quantity such that the package could be sold for an even dollar. Many a man has built up a paying trade among wealthy people for fancy butter, eggs, fruit and the like, why not do the same with honey? Thousands of people would be only too happy to buy nice, ripe, thick, rich clover honey, if they only knew where to get it, could feel sure that they were getting it direct from the producer, and that it was pure. In order to build up such a trade, a man does not need to be located in a large city; in fact, such a location would be against him. Some country place, like "Clover Dale," away in Northern Michigan,

would be a big factor in making a success of the business. I would put a neat advertisement in the city dailies, perhaps in the monthlies, briefly describing extracted honey (many don't know what it is), offering to send so many pounds for \$1.00, guaranteeing it to be strictly pure. I would offer to send a generous sample by mail for ten cents, and allow the ten cents to apply on the first purchase or one dollar's worth of honey. I know this would be a generous offer, but it would be in the way of an advertisement, and would pay well if it secured a permanent customer. With the sample would be sent some attractive, convincing, appropriate literature.

I am satisfied that there is good big money in this scheme for the right man. I should enjoy developing it myself, but I have seen too many instances of attempting too much, hence I must be content with suggesting it to some other man. If I can in this way help to advance bee-keeping, I am filling a useful sphere.



NATIONAL CONVENTION NOTICE.

The 34th Annual Convention of the National Bee-Keepers' Association will be held in Los Angeles, Calif., on August 18, 19, and 20, in Blanchard's Hall, at 235 S. Broadway. The headquarters of the Association during the convention will be at the Natick House, corner of First and Main Streets.

It is expected that this will be the largest and best convention ever held by the bee-keepers of America. Every one interested in the production of honey should be present, if at all possible. Besides the question-box, which will be one of the special features of the program, the following subjects will be discussed in papers by the prominent bee-keepers mentioned. Afterward a free and full discussion

will be had by all in attendance who wish to participate. The subjects and men to introduce them are as follows:

"Honey Exchanges and Co-operation Among Bee-Keepers," by Prof. A. J. Cook, Claremont, Calif.

"How to Make Money Producing Extracted Honey," by J. F. McIntyre, Sespe, Calif. Response by E. S. Love-sy, Salt Lake City, Utah.

"The Production and Sale of Chunk Honey," by Homer H. Hyde, Floresville, Texas. Response by C. P. Daudant, Hamilton, Ill.

"The Eradication of Foul Brood," by N. E. France, Platteville, Wis.

"Reminiscences of Bee-Keeping and Bee-Keepers in the Early Days," by A. I. Root.

There will be reports by the officers, which include Pres. Hutchinson, General Manager France, and Secretary York.

The California bee-keepers are planning to give all in attendance one of the grandest receptions imaginable on the first evening, Tuesday, Aug. 18. No one will want to miss this feature of the convention.

It is an opportunity of a lifetime to take the trip to California, as all convention members can avail themselves of the low railroad rates, as it comes at the time of the Grand Army meeting in San Francisco, and the same rates apply to Los Angeles.

For further information or particulars that may be desired, address the Secretary, 144 E. Erie St., Chicago, Ill.

GEORGE W. YORK, Sec.

W. Z. HUTCHINSON, Pres.



HOFFMAN FRAMES HARD TO HANDLE.

In my work as State inspector of apiaries there are days in which I handle bees in a dozen different styles of hives, and on several styles of frames. When a hive is new, or the frames are new, almost any kind of

frames can be handled with ease, but after the bees have occupied frames for two or three years, and they have not been handled very much, some styles of frames become glued in so tightly that it is almost impossible to get them out. Of all the frames that I meet, there are none that I dread encountering as I do the Hoffman, especially after they are thoroughly glued in. I know there is a dummy at one side that is supposed to come out first, but that becomes glued in so firmly that there is, honestly, only one way to remove it, and that is to invert the hive and pound it loose. (I have had to do this more than once.) Then it requires a strong screw-driver or a chisel to pry the frames loose—no ordinary jack knife will answer. And it won't answer to pry against the ends of the top bars either. They will break off before the frame will come loose. I have sometimes been tempted to buy a colony with the frames in this condition and express it down to my good brother Root, and let him see what Michigan bees can do in the glue line.

Mr. Root says in his catalogue that the chief advantage of their so-called "all wood" frames, the frames with no projections, is their cheapness. It is an advantage, but I don't look upon it as the chief. Of all the frames, the one that makes my heart glad when I am opening hives over the country, is the plain, all-wood frames. I can pry this one over a little, and that one over a little the other way, loosen up the one between and have it out, before the man with the Hoffman frames has got through saying, "Well?" "Well?"

No, I have not just finished one unusually trying job. The worst one I had was three weeks ago, and I have purposely waited this long that I might be sure I had "cooled off."

HOW TO STOP A SWARM THAT IS ISSUING.

Smoking a colony to drive back a swarm that has begun to issue is mentioned in Gleanings. That is, as soon as a swarm is seen issuing, go to the hive with a lighted smoker, and puff smoke in at the entrance. The writer, a Mrs. Ralph Bulkley, of Arizona, says that it succeeds with her, and then the next morning that colony is divided, or "shook." I have tried this plan several times, and, with me, it was not successful. As long as the smoke was being poured in at the entrance the bees would stay in, because they could not get out through the smoke, but just as soon as there was a "let up," out they would pour again. I was talking this over recently, with some bee-keeper where I was, and he said his experience was like mine. He had tried it, but as soon as he stopped smoking, out they would come again.

In this connection I might say that there is a plan of stopping a swarm from issuing. Perhaps I might better say that it has proved successful with me—yes, and with Mr. Heddon, of whom I learned it. Mr. Heddon and myself did not clip our queens' wings. Perhaps Mr. Heddon does not now, but I do, or should if I had bees. We used a Whitman fountain pump to control swarms. We had a barrel of water standing in the center of the yard, also three or four pails filled with water standing about in different parts of the yard. Of course, the water in these pails became warm so that it would not chill bees if poured over them. Well, if swarms began to come thicker and faster than we could control and hive them we cast an eye over the yard every minute or two. If a swarm was seen issuing, the supers were at once lifted off, and about half a pail of water doused into the hive. That stopped the swarming business

in that hive for good and sure, and seemed to do no harm. The bees soon dried themselves and resumed work.

**BEEES IN THE NORTH MAY BE WINTERED
OUT OF DOORS IF PROPERLY
PROTECTED.**

It may be a little early to begin to discuss the wintering problem, but we must remember that preparedness is the secret of most successes. If we must winter our bees out of doors, and we have not been uniformly successful in wintering them in that manner, it is none too soon to be investigating, considering and planning. Bees can be wintered successfully out of doors, even in the extreme north, if given proper protection. A slight protection may be all right, may be the best, in Southern Michigan or in Ohio, but in Northern Michigan the heat of the bees alone must be depended upon for warmth, and the whole plan of wintering must be in conserving that heat. I remember, during the first or second year that the Review was published, we had a special number, on out of door wintering, and one of the contributors was Mr. O. O. Poppleton, who had had several years' experience with bees in Iowa, where the winters are often severe. I remember that he placed special stress upon abundant protection. He said that many who claimed to protect their bees out of doors did not more than half do it. He used five inches of dry timothy chaff, and thought that still more would have been better. The most perfect out door wintering of bees with which I have been acquainted was that of "Cyula Linswik" and her sister in Northern Michigan. Their bees were thoroughly packed in dry chaff, with a large opening over the brood nest, this opening being covered with wire cloth to keep out mice, and then there was a roof over

the opening, in fact over the whole hive, to keep out the rain and snow. In a recent trip in Northern Michigan, almost up to Petoskey, I came across a young bee-keeper, Mr. Ira D. Bartlett, of East Jordan, who is making a grand success of bee-keeping, and he winters his bees packed out of doors, but the protection is most thorough. In the first place, he has some special packing boxes, each large enough for four colonies, and painted a dark red. The hives are packed in dry sawdust, that cut from kiln dried lumber, and packed all around, not only on the sides, and on top, but underneath, as well. There are about five inches of this sawdust all around each hive. The cover is removed from the hive, a cotton quilt being left in place, and then over this is placed a piece of woolen blanket, and over the blanket the sawdust packing. The roof does not fit down snug, but projects out over the edge of the box, and slants down, so that all storms are kept out of the packing, but all moisture can escape. One thing more: Two hives face one way, and two in the opposite direction. In front of the entrances, upon opposite sides of the box, is built a portico with a door that can be closed up tight, thus keeping out snow and cold. If there should come a warm day in the winter, or towards spring, when the bees could fly, this door is removed and the bees allowed to fly, or, rather, it could be removed, as Mr. Bartlett says that the bees show no disposition to fly during the winter. It is so warm in the hive and in the portico, that the bees bring all of their dead bees out into the portico even in the coldest weather. Mr. Aspinwall, of Jackson, Michigan, a man who has wintered his bees out of doors without loss, for the last ten years, also has a vestibule in front of his hives, and I remember that he made quite a point of it. It is possi-

I say that there is more in this vestibule than we imagine. Suppose we left the doors of our houses standing open all winter, as we leave the entrance to the hive, we would find it rather hard to keep warm. We not only keep the doors closed, but we have a storm door over the outside door that no cold may get in when the door is opened. With a hive of bees completely surrounded, on all sides, with several inches of dry sawdust, and a vestibule over the entrance, each colony is protected almost the same as though in a little cellar by itself. My preference would be to put all of the colonies into a cellar, but the stubborn fact remains that Mr. Bartlett has had perfect success, for several years, beginning with one colony, eight years ago, I believe, when he was fourteen years old, and gradually increasing, until he now has 150. He began this season with 100 colonies, and has secured not far from 200 lbs., mostly extracted honey, per colony. But that is another story—I may tell it some other time.

EXTRACTED

THE GRAND CANYON.

One of the Greatest Wonders of the World.

Our frontispiece this month shows a view in the Grand Canyon, but I have traveled enough, and taken enough photographs of distant views to know that scarcely the faintest conceptions of such scenes can be placed upon paper. They are merely hints. I think more can be done in the way of description, than by pictures in giving an idea of these distant and wonderful views. Last month I gave a short description of the Grand Canyon, copying from the book called "The Titan of Chasms," and I will now give

another short extract. The writer, in speaking of many wonders in New Mexico and Arizona, says:

"At the head of the list stands the Grand Canyon of the Colorado; whether it is the 'greatest wonder of the world' depends a little on our definition of 'wonder.' Possibly it is no more wonderful than the fact that so tiny a fraction of the people who confess themselves the smartest in the world have ever seen it. As a people we dicker abroad to see scenery incomparably inferior.

But beyond peradventure it is the greatest chasm in the world, and the most superb. Enough globe-trotters have seen it to establish that fact. Many have come cynically prepared to be disappointed; to find it overdrawn and really not so stupendous as something else. It is, after all, a hard test that so be-bragged a wonder must endure under the critical scrutiny of those that have seen the earth and the fulness thereof. But I never knew the most self-satisfied veteran traveler to be disappointed in the Grand Canyon, or to patronize it. On the contrary, this is the very class of men who can best comprehend it, and I have seen them fairly break down in its awful presence.

I do not know the Himalayas except by photograph and the testimony of men who have explored and climbed them and who found the Grand Canyon an absolutely new experience. But I know the American continents pretty well, and have tramped their mountains, including the Andes—the next highest mountains in the world, after half a dozen of the Himalayas—and of all the famous quebradas of the Andes there is not one that would count five per cent on the Grand Canyon of the Colorado. For all their 25,000-foot peaks, their blue-white glaciers, imminent above the bald plateau, and

green little bolsones (pocket valleys) of Chile, Peru, Bolivia, and Ecuador; for all their tremendous active volcanoes, like Sangay and Cotopaxi; for all an earthquake activity beside which the 'shake' at Charleston was mere paper-doll play; for all the steepest gradients in the world (and Peru is the only place in the world where a river falls 17,000 feet in 100 miles)—in all that marvelous 3,000-mile procession of gigantism there is not one canyon which any sane person would for an instant compare with that titanic gash that the Colorado has chiseled through a comparatively flat upland. Nor is there anything remotely approaching it in all the New World. So much I can say at first hand. As for the Old World; the explorer who shall find a gorge there one-half as great will win undying fame."

THE HONEY CROP OF 1903.

It is Most Excellent in the Central Northern States.

Each year, about July, Gleanings, with characteristic enterprise, gathers reports from all over the country in regard to the honey crop. About two and one-half pages of the July 15th issue are devoted to these brief reports, set in fine type. There is not room in the Review to copy them, but the summing up of the editor is as follows:

"This has been a peculiar season; but, taking all things into consideration, there will be more white-clover honey this year than last. The season has been exceptionally good in a great part of the white-clover region, particularly in Wisconsin, Michigan, Minnesota, Illinois, Iowa, Indiana, and Ohio. In some of the Southern States the season has been poor. In the New

England States there has been an almost complete failure; but recent rains have toned up the situation so that some honey will be secured. The yield of white honey has been light in many parts of New York; but, as in the New England States, the recent rains have improved conditions, but not quite enough to affect materially the crop of white honey, but sufficient to make, probably, a fair flow from buckwheat.

In Pennsylvania the season has been poor to fair. In Nevada and Utah the season has been good, and the honey is of first quality. In Arizona the flow has been less than the average. In Kansas and Nebraska the crop has been light in most sections. In Washington the season has been poor. Texas will not come up to the average. Idaho has had a severe loss of bees. In Colorado there may possibly be the usual crop, but the season was unfavorable in the early part of it. In Southern California, notwithstanding the early prospects were so flattering, there will be only about a third of a crop. In the central part of the State the season is little if any better.

As to the quality, the honey will be extra-fine this year; and even if there should be more of it this year than last, it will be so much better that the prices ought to hold the level of last year, especially if we take into consideration the general advance in other things during the past year. In the Eastern markets, where production has been light, there ought to be a general toning-up of prices. There will not be a large amount of California honey shipped east this year, probably; so what little honey is produced ought to bring good prices."

On this same subject, Bro. York, of the American Bee Journal, says:

Our reports show that the far East has practically no honey, and the far

West perhaps not more than half a crop. The central portions of the country seem to be having an enormous flow; especially is this true of the locality within, say, 300 miles of Chicago. The demand for bee-keepers' supplies has not been so great in ten years. It seems that everybody wants a lot of supplies, and wants them right away. There seems to have been a great deal of swarming, and a good yield of white clover. Personally, we have never seen such a perfect mat of white clover bloom as there is in this locality this season.

We doubt if it is necessary for the price of honey to be lowered very much, if any, from the price of last season. We think the people are ready to buy honey more freely than ever before. This, we think will be especially true as the bulk of the honey produced is of white clover, and that seems to be the kind preferred by the majority of the people; at least they think that is the kind they ought to have. The joke is usually on them, as they are apt to call nearly all kinds of honey clover honey. There is practically no new honey on this market as yet, but we suppose it will begin to come in very soon."

HAVING WORKER COMBS BUILT.

By the Right Kind of Management we can
have Worker Combs Built and Save the
Cost of Foundation.

When bees are storing honey, a certain amount of comb may be built at practically no expense it is really so much gain. One difficulty to be overcome is the tendency to build drone comb under certain conditions, and we need to know these conditions and learn how to avoid them. Mr. G. M. Doolittle, in *Gleanings*, in an imaginary (I suppose it is imaginary) con-

versation with a neighbor, describes the conditions under which worker comb may be secured. Here is the conversation:

"Good morning, Doolittle. Too cold for the bees to work this morning, and here it is nine o'clock the 16th day of August."

"Yes, it is very cold for the time of year, Mr. Brown. The mercury stood at only 10 degrees above freezing this morning, and the same on the morning of the 13th. I fear we are not going to get much buckwheat honey, on account of the cold, as it is now nearly in full bloom; and the hives do not have at present one-fourth enough honey in them for winter; and unless we have a yield from buckwheat it means feeding for winter stores—something I have not had to do for twelve or fifteen years past. But we will not dwell on this part of the matter. What can I do for you this morning?"

"Having no surplus honey this year, with a prospect of buying sugar for winter stores, owing to our wet, cold summer, I thought to economize a little by having the bees build their own comb in the frames next season instead of buying foundation as I have 'generally done. I read somewhere that you had the most of your combs built in the frames without the use of foundation, only as starters, so I came to talk the matter over with you."

"Yes, I have allowed the bees to build many combs in the frames, and mainly did this when I first began bee-keeping. But what part of this comb-building has bothered you?"

"In taking out the combs and inserting frames having only a starter, I find the bees almost invariably build drone comb."

"Yes, that is as I have found it all along my bee-keeping life, for the same has shown that it is folly to in-

sert a frame, having only a starter in it, in a full colony previous to the swarming of that colony, with the hope of getting much if any worker comb; and if frames must be inserted in such colonies at such times, it will pay the apiarist to purchase comb foundation for such frames, even though he has no surplus honey, rather than try to get them filled by the bees."

"But suppose we have worker combs on hand for such times."

"That would be all right; in fact, I consider built-out combs even better for such places than frames filled with foundation; for where only one or two frames of foundation are placed in a hive between combs, when honey is coming in from the fields, the cells from the comb along the top-bars to the frames are extended so they jut out into the space that belongs to the frame having the foundation in, before the foundation is drawn fully out, so that we have "fat" combs in some frames and "lean" ones in others, in a way that causes much trouble in exchanging them, especially in hives laying frames at fixed distances."

"But these extra combs cause us to pre-suppose that they have been built some time, so we come to the main idea how to secure extra frames of worker comb without using full sheets of foundation."

"I find that there are three conditions of the hive or colony under which, if rightly managed, the bees will almost invariably build worker comb."

"Now you are talking about just what I wish to know. Tell me about the condition you consider best."

"The surest of the three ways is when a colony is quite weak, or what we term a nucleus. If such a colony is deprived of all of its combs save one of honey and one of brood, and

a frame having a starter in it is inserted between the two combs left in the hive, the bees will, ninety-nine times out of a hundred, fill that frame with worker comb, and said comb will be as perfect as one built from foundation under the most favorable circumstances. Taking advantage of this fact, I take frames of brood from the weaker colonies I have at the beginning of the honey-flow, those too weak to work in sections to advantage, and give this brood to the weaker of the stronger colonies, and set the weak colonies to building comb, as I have explained. You will note here that I really make a gain in this way as to surplus honey, for this brood, where placed, gives better results in section honey than it would have done had it been left where it was with the weak colony, as it almost immediately puts the bees of the colony where given (into the sections) at work, while, had the brood remained in its own hive, these colonies would have been somewhat slow in starting in the sections."

"Well, that is quite a scheme, surely; for we can really kill two birds with one stone in this way. I wish I had known of this matter last year, as I had several colonies that I could have worked that way. But what of the second-best plan?"

"The second is, at the time of hiving new swarms, which are treated in this way when I wish them to build worker comb. The swarm is hived on the full number of frames the hive contains, and left for 36 to 48 hours, a super of sections being put on when the swarm is hived. The hive is now opened, and five of the frames are allowed to remain—the five that have perfect worker comb being built in them, and dummies are used to take the place of the frames taken out. This throws the force of bees, not needed below, into the sec-

tions, so that the bees do not need to build any store comb in the brood-nest, which store comb, when built for that purpose, is generally of the drone size of cells. By this time the queen is ready to keep up with the bees in their comb-building, with her eggs; and in this way, nine times out of ten, I get these five frames filled with worker comb and, besides, secure a good yield of section honey."

"Why do you wait from 36 to 48 hours about arranging the hive? Why not give only the five frames at the time of hiving?"

"Glad you asked that question, as I should have forgotten to speak of something that would have bothered you had I not told you. In the first place, a swarm given only five frames when hived, is liable to think the place of abode too small, and leave, or swarm out, and such a procedure is a nuisance. In the next place, when any colony having an old or laying queen is first hived, the bees are likely to build comb too fast for her, hence some of the combs first started are liable to be the drone size on account of the queen not being in condition to lay many eggs at first, as all queens cease almost entirely to lay for 24 hours previous to swarming, so that they may be reduced in weight that they may fly and accompany the swarm; and full prolificness does not return under 48 hours after the swarm has commenced keeping house in its new home. And as these combs having the drone size of cells are just right for store combs, the bees generally, when once started, keep right on with that size of cells till the bottom of the hive is reached."

"I see now why I have had so much drone comb built when hiving swarms without giving frames of foundation, and I am glad to know of this matter. But I must soon be going; but I should like to hear of the third plan before I go."

"The third condition under which worker comb will be built is just after the young queen gets to laying in any colony having cast a swarm. If, after she has been laying two or three days, we take away two or three combs and put frames with starters in their places, we shall find that these frames will be mainly filled with worker comb. As the bees are now over the swarming fever, and desire worker bees to promote the welfare of the colony, no drones are needed, and the young queens are not likely to lay in drone comb. However, we are not quite as certain of all worker comb in this case as we are in either of the other two, as there are plenty of built combs in the hive for the young queen to use, and it sometimes happens that the bees will prefer to leave off storing in the sections and build store comb in the frames, thus defeating what we are striving to attain."

"Well, thanks until you are better paid. I will try all the plans next year, and then I can tell more about how the matter works with me. Good day."

BEE STINGS.

Their Rational Treatment is Similar to that for Snake Bites.

There is no question that the less a person is stung the better. The filling of the system with bee poison does not improve the health. A bee-keeper should take all reasonable precautions to avoid stings, and it may be advisable, in some instances, to take a little pains in avoiding the effects of a severe sting. Mr. D. A. McLean has an excellent article, in *Gleanings*, on bee stings and their rational treatment and from it I make the following extract:

"The pain produced by the poison in contact with the nerves is of only brief duration if left entirely alone. Why? Probably because the acid of the poison has become neutralized by the fluids and substances it has come in contact with. Now if, as soon as a dose of the poison is received under the skin, the small area involved could be cut off from the surrounding tissue and all spread of the poison prevented until it had lost its virulence, no other effects would follow. Now, this is exactly what I propose to do as far as can be done with the means at hand, by my method of treating bee-stings, and that I have followed for a number of years with very gratifying results.

When I receive a severe sting (and there are grades of severity as you all know), with my finger-nail I scrape out the sting if it is still adherent, and immediately grasp with the thumb and finger the portion of skin where the puncture is, squeezing it very firmly between them—in fact, pinching it quite violently. This has the effect of numbing, to a great extent, the sensibility of the nerves in the portion pinched, so that the effect of the poison is not felt on them. It also has the effect of preventing the spread of the poison into the surrounding tissue. After holding in this manner for a few seconds I ease up on the pinching. If the pain begins to return I tighten the "pinch" again, and hold it until, on letting loose, the pain no longer returns, and I know the poison has lost its power to produce irritation of the nerves, and, consequently, pain; and that is generally the end of the trouble with that sting. Occasionally, and especially if you have forgotten during the first hurt of the sting, and rubbed the spot a little, you will have swelling later, with the discomfort attending it; but the severe pain caused by the poison has been avoided.

This may be considered a good deal of trouble and loss of time, and, if resorted to every time a sting is received, it might be so; but that is scarcely necessary.

Of the stings I receive while in the yard, probably four-fifths of them could not be located by me in five minutes after receiving them; but, there is the other fifth. As every bee keeper knows, he occasionally receives a sting that is painful beyond all sense or reason, and makes him feel as though he wanted to say or do things. These are the stings that the pinching treatment will relieve, and enable him to keep his temper, and, after a few minutes go on with his work; and I consider it well worth the time and trouble required.

To sum up the treatment, do not rub the place when a sting is received; do not resort to medicines applied over the spot, as they can do little or no good; do not lose your temper. Do at once, if the sting appears to be a severe one, and you have time, scrape out the sting with the finger-nail; grasp, with the thumb and finger, the skin where the puncture is located, and raise from the flesh underneath, and pinch it hard, holding it firmly until, on letting loose, the pain no longer returns. Resume your work with the charitable thought toward the bees that they do not sting you in a spirit of malice, but in the legitimate defense of their home and property."

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Eustis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

Book on South Dakota.

A new book on South Dakota has just been published by the Chicago, Milwaukee & St. Paul Railway. It describes the agricultural and stock conditions in the state, gives the latest stock reports, tells about the present opportunities there, and is well illustrated. Sent on receipt of two cents for postage.

F. A. Miller, General Passenger Agent, Chicago.

Robert C. Jones, Michigan Passenger Agent, 32 Campus Martius, Detroit.

WANTED:

Extracted Honey.

Mail sample and state lowest price delivered at Cincinnati. Will buy *Fancy White Comb Honey*, any quantity, but must be put up in no-drip shipping cases.

C. H. W. WEBER,
11 2146-18 Central Ave., Cincinnati, Ohio.

Please mention the Review.

VASSAR QUEENS

More than twenty years ago I learned to raise queens and for the first four or five years I had for a teacher no less a person than the editor of the Bee Keepers' Review. My bees are the long-tongued, red clover, three-banded Italians; handsome, gentle and the best workers I ever saw. Through the swarming season I saved all the best cells, from the best colonies that swarmed; those cells were given to very strong nuclei, thus they had the care of the bees all the time. Fine laying queens of this stock now ready to ship at the following prices: Untested queens, \$1.00 each; six for \$5.00; tested queens, one year old, \$1.50 each; select tested, \$2.00 each; breeding queens, \$3.00 each. Safe arrival guaranteed.

ELMER HUTCHINSON,

Vassar, Mich.

7-03-11

Please mention the Review.

No more weak, dysenteric or foul broody stocks.

PUNIC BEES

(APIS NIGRA)

The bees of the future.

These marvellous bees have been in England, ever since 1886; are far superior to any others, are being adopted in Sweden after 5 years trial and by everyone who tries them.

The truth about these bees is given in the first 7 numbers of the "Bee Master" sent post free to any address for 30 cents.

Virgins, each, 60 cents; doz., \$6.00. Fertile, untested, \$2.00; tested, purely mated, \$6.00 each, post free. Guaranteed against loss in transit, introduction, mating (virgins), foul brood and winter dysentery. Address,

JOHN HEWITT & CO.

Brunswick Works,

6-03-41

Sheffield, England.

Names of Bee-Keepers

TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged in alphabetically (in the largest sizes), and, although this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a type writer, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly, in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky. 182	N. C. 60
Ark. 130	Kans. 350	New Mex. 56
Ala. 80	La. 38	Oregon 104
Calif. 378	Mo. 500	Ohio 1120
Colo. 228	Minn. 334	Penn. 912
Canada 1200	Mich. 1770	R. I. 46
Conn. 162	Mass. 275	S. C. 40
Dak. 28	Md. 94	Tenn. 176
Del. 18	Maine 270	Texas 270
Fla. 100	Miss. 70	Utah 68
Ga. 90	N. Y. 13125	Vt. 200
Ind. 744	Neb. 345	Va. 182
Ills. 900	N. J. 130	W. Va. 172
Iowa 800	N. H. 158	Wash. 128
		Wis. 625

Comb Honey

Is profitably produced only when several important factors are combined. First, we must have the right kind of bees. We all know that there is not only a vast difference between the different varieties, but also a variation in strains of the same variety. Just which are the best bees for producing comb honey, *why* they are best, and how to secure them, is told in one of the chapters of **ADVANCED BEE-CULTURE**.

When bees of the right kind have been secured, then comes the matter of using the right kind of hives, fixtures, sections, etc., to secure the best results with the least labor; and **ADVANCED BEE-CULTURE** has a chapter on "Hives and their Characteristics;" and another on "Sections and their Adjustment on the Hives."

Bees may gather large quantities of white honey, and be so managed as to put very little of it in the sections; or they may be so managed that nearly all of it will go into the sections; all of which is explained in one of the chapters of **ADVANCED BEE-CULTURE**.

Comb foundation costs money. Notwithstanding this, its use is very profitable at some times and in some places. Under other conditions it worse than wasted. Read **ADVANCED BEE-CULTURE** and learn *why*.

ADVANCED BEE-CULTURE is a book of 32 chapters, describing the most advanced methods of bee-keeping from the beginning of the year through the entire season.

Fifty cents is the price of the book; or it and the **REVIEW** for one year will be sent for \$1.25.

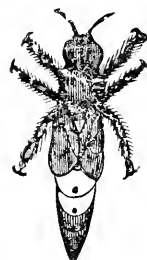
W. Z. HUTCHINSON, Flint, Mich.

Queens

Golden and Leather colored Italian, warranted to give satisfaction. Those are the kind reared by **QUIRIN THE QUEEN BREEDER**. Our business was established in 1888. Our stock originated from the best and highest priced long tongued, red clover breeders in the U. S. We rear as many and perhaps more queens than any other breeder in the North. Price of queens after July 1st, Large Selected, 75c, six for \$4.00; Tested Stock \$1.00 each, six for \$5.00; Selected Tested \$1.50 each, six for \$8.00; Breeders, \$3.00 each; Two-frame Nuclei (no queen) \$2.00 each. Special low prices on Queens in lots of 25 to 100. All queens are mailed promptly, as we keep from 300 to 500 on hand ready to mail. We guarantee safe delivery to any State, Continental Island, or European Country. Our circular will interest you. It is free. Address all orders to

QUIRIN THE QUEEN BREEDER,
5 03-6t Parkertown, Ohio.

Tennessee Queens



Daughters of Select Imported Italians. Select long-tongued (Moore's), and select, Straight 5-band Queens, bred 3½ miles apart, and mated to select drones. No bees owned within 2½ miles; none imported within 3, and but few within 5 miles. No disease. 30 years' experience. Warranted queens 60c each; tested, \$1.25 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Please mention the Review.

Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-26, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. The have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902.

Mr. Atchley, Sir:—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 140 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm, each stored 28 pounds of honey; so you see I have 11 colonies from one, and 56 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen or heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 56 pounds of honey. If any of you scientific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I want no better. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3- and 5-banded Italians, Cyrians, Albino, Holylands and Carniolans, bred in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$6.00 per doz. All other months, 75c each, \$4.25 for six, or \$8.00 per doz. Tested queen of either race, from \$1.50 to \$3.00 each. Breeders from \$3.50 to \$10.00 each. 1-2 and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY
P. O. Box 79, Beeville, Bee Co., Texas.

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co.
Sheboygan, Wis.

PROVIDENCE QUEENS PROVE THEIR QUALITIES.

The product of twenty years careful and painstaking breeding. Contain the blood of the finest races known. They are hardy, active, long lived, strong flying bees, developed under the trying conditions of New England climate. Unexcelled honey gatherers.

Warranted queens \$4.00,
Tested queens - \$1.50.

LAWRENCE C. MILLER,
Box 113, Providence, R. I.

5-4t

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

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\$QUEENS - \$BEES - NOW.

A. I. SWINSON, Queen Breeder, furnishes best to be had in U. S. First-handed warranted queens, \$1.00. Tested \$1.50. Breeders, \$5 to \$10. American Albino Italians, and Adels mated to Albinos.

SWINSON & BOARDMAN,
Box 358, Macon, Ga.

Please mention the Review

The Choicest of Tested Queens

By return mail, \$1.00 each.

Three-banded Italians, from the best imported and home-bred mothers. Every bee-keeper knows that these are the best best honey gatherers. If you want strong colonies and full supers, try our queens, you will not be disappointed. Safe arrival and satisfaction guaranteed. Tested queens \$1.00 each, untested, 75 cents, \$8.00 per dozen.

J. W. K. SHAW & CO.
5-03-tf Loreauville, La.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross.
Shipped from New York or from factory.

Send for catalogue to

J. H. M. COOK, 62 Cortland St., N. Y. City

Please mention the Review.

BEEES FOR BUSINESS.



One of the most prolific queens I ever owned was imported by the U. S. Department of Agriculture, from the province of Bergamo, Italy, during Sept. 1901, and sent to me to be tested. In all my experience I have not seen more or better bees for business produced by a queen. A nucleus formed with this queen—one comb of brood and enough bees to cover three combs—filled a 10-frame hive in 30 days with brood and honey, this year, and with the same treatment filled the hive and stored forty lbs. of surplus honey last season. Swarms headed by her daughters and hived on 10 drawn combs, completed 56 sections in 15 days, capping them smooth and white, and are at this writing (May 23) working vigorously on the second lot.

Daughters or grand-daughters of this queen will be mailed promptly for \$1.00 each, or \$9.00 per doz., and the best golden queens for the same price. Money Order office Warrenton.



W. H. PRIDGEN,
Creek, N. C.

7-21

Please mention the Review

We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest

Send for Catalog



Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

\$50 to California

and return, from Chicago, for *National Bee-Keepers' Convention*, in Los Angeles, August 18, 19 and 20. Tickets on sale August 1st to 14th inclusive; final return limit, Oct. 15th, 1903.

Low excursion rates from San Francisco and Los Angeles to points in California, and to Grand Canyon of Arizona, in connection with a correspondingly low rate up to Chicago, will be made by all lines.

The transcontinental trip via the *Santa Fe* in midsummer, is the most enjoyable of any. It crosses the table-lands of central New Mexico and northern Arizona: average altitude exceeds one mile above sea-level—air pure, cool and bracing. Oil-sprinkled tracks—dustless.

For full information and copy of a beautiful book about the California trip address

F. T. Hendry,
Gen'l Agt.



151 Griswold St.
Detroit, Mich.

Bee-Keepers

It is a conceded fact that the bulk of the honey of the future is going to be produced in the irrigated portion of what is known as "Arid America." If you are interested in the progress of apiculture in this vast region, you should subscribe for the

Rocky Mountain

Bee Journal,

a twenty-page monthly; price 50 cents per year.

This is now the only bee publication west of the Missouri river. We have several hundred eastern subscribers, and have still room for more. Write for free sample copy. Address

H. G. Morehouse
Boulder, Colo.

ROOT'S GOODS

At Root's Prices

Pouder's

Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

WALTER S. POWDER

512 Mass. Ave

INDIANAPOLIS IND.

The Bee-Keepers' Paradise.

300,000 Acres of Wild Land for sale, in the famous Fruit Belt Region of Michigan, at low prices and on easy terms.

These lands are especially adapted to fruit culture, all the most desirable fruits being cultivated with especial success.

These uncultivated lands also produce immense quantities of wild berries, from which large crops of honey are obtained, at a good profit to the Bee-Keeper.

Write for particulars and circulars.

"No trouble to answer letters."

Address:

J. E. Merritt,
Gen'l. Mgr.
Michigan Land Co.,
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Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, be cause it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation for cash

a specialty BEESWAX ALWAYS WANTED at highest prices Catalog giving

Full Line of Supplies

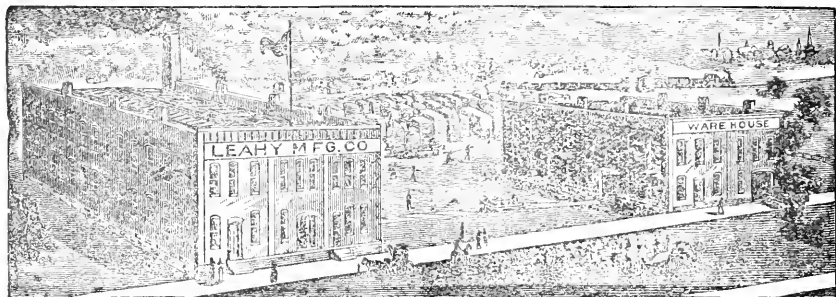
with prices and samples free upon application. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin

E. Grainger & Co., Toronto, Ontario, Sole Agents for Canada.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee Keeper, which is much improved, being brimful of good things from the pens of some of the best writers on our land, and we are now making of it more of an illustrated journal than heretofore. Price only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ill.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,

JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight.

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

6 Years

This will interest you.

DULUTH, Minn., April 24, 1903.

Please send me a box of **Yellowzones** for the enclosed \$1.00. We have used this remedy, now, for six years and have increased the scope of their use until this is about the only remedy we make use of.

(Rev.) S. C. Davis.

This I have always claimed—that the more you know of

YELLOWZONES

and the longer you use them the better you will like them. And, further—that they are *Absolutely Unequalled* as a general household remedy. Just read that testimony again. A man doesn't send his dollars time and again, year after year, for the same remedy unless he's getting *mighty good results!* You know that. 100's of substantial beekeepers have been my customers just as long as he, and their kind words and *continued patronage* tell the same story.

If you keep but One Remedy in the House it should be YELLOWZONES.

\$1.00 per Box of 150 Tablets.

Trial size 25 cents.

Your money back, and *Another Box* if not satisfied.

W. B. House, De Tour, Mich.

Please mention the Review.

THE AMERICAN BEE-KEEPER,

FALCONER, N. Y.

Is one of the leading illustrated monthlies of the world, and it is sent three years for one dollar, in advance. Sample copy free.

Please mention the Review.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

SPECIAL ADVANTAGES FOR THE MANUFACTURE OF BEE SUPPLIES.

RIVER FALLS, WIS., April 28, 1903.

W. Z. Hutchinson, Flint, Mich.

Dear Sir: On March 17 we had a severe flood. My old mill dam, which has stood for 35 years, gave way, and I was obliged to remove it entirely. I purchased a power immediately above, and am now engaged in erecting a 26 foot dam which will make a total fall of 50 feet, and supply water-power for the greater part of the year in excess of 100 horse-power. I will enlarge the live department, and put in some new labor saving machines, which, together with cheap power, and cheap lumber, and the best help I can secure, will, I hope, enable me to build up one of the finest Bee Supply Factories in the world. I aim to supply the Western trade, and it is plain to see that I have natural advantages which my friends in the East do not have, and can never enjoy. We will be running again within a month, and look for patronage from old and new friends.

W. H. PUTNAM

503 tf

River Falls, Wis.

FOR SALE—100 Colonies of Leather Colored Italian Bees. A tested Queen in each Colony. In Dovesailed Hives. Price, after July 15 and during August, \$4.00 each; in lots of 10, \$3.50 each.

F. A. GRAY,
REDWOOD FALLS, MINN.

Please mention the Review.

Superior Stock.



If the advertising that I have been doing the past three years has not convinced you that the Superior Stock that I have been offering for sale is really superior, then it is the fault of the advertising, for the stock is really all that I claim for it. I have guaranteed safe arrival, safe introduction, purity of mating, and satisfaction to the extent that a queen may be returned inside of two years, and the money will be refunded, together with 50 cts. to pay for the trouble. No other breeder makes any such guarantee. I have sold hundreds of queens under it. I do not know of a single dissatisfied customer, while I have dozens of letters from men telling of increased results from the introduction of this stock, and asking: "Can I get any more queens of you like the one I bought two years ago?"

Although the price of these queens is \$1.50 each, I have never been able to keep up with the orders. Most of my customers wait until spring before sending in their orders, and then have to wait from four to eight weeks. A few are far-sighted enough to send in their orders in the fall or winter, and these get their queens in May or June, in time to be of some service to them the same year. Send \$1.50 now and I'll book your order, and you will get your queen early in the season.

The price of a queen alone is \$1.50, but I sell one queen and the Review one year for only \$2.00. When you send in your renewal to the Review, send another \$1.00 (\$2.00 in all) and your subscription will be put ahead one year and your order booked for a queen.

W. Z. Hutchinson, Flint, Mich.

Victor's Superior Italians

Go by Return Mail, and are Guaranteed to Give Satisfaction, or Money Refunded.

I am ready with the same old time and tried stock of Italian queens and bees as of old. My queen-mothers in yards No. 1 and 2 are serving their fourth year in that capacity, 1900-1903. Their daughters have pleased The A. I. Root Co., W. Z. Hutchinson, O. L. Hersheiser, G. M. Doolittle, R. F. B. Leimann, F. B. Simpson, and many others prominent in apiculture. In fact, every customer has been pleased as far as I have heard. I COULD FURNISH HUNDREDS OF THE VERY STRONGEST TESTIMONIALS, but space forbids. Practically all the queens that I have sent from these yards were daughters and grand-daughters of the two "Old Wills," as we often call them. Untested queens, \$1.00 each; select untested, \$1.25 each; tested, \$2.00; breeders, \$3.00 to \$7.00. Send for illustrated price list.

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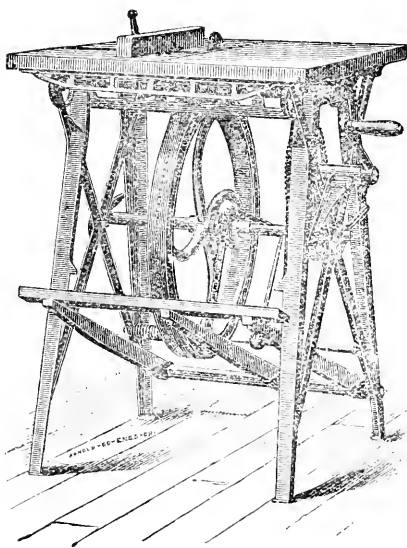
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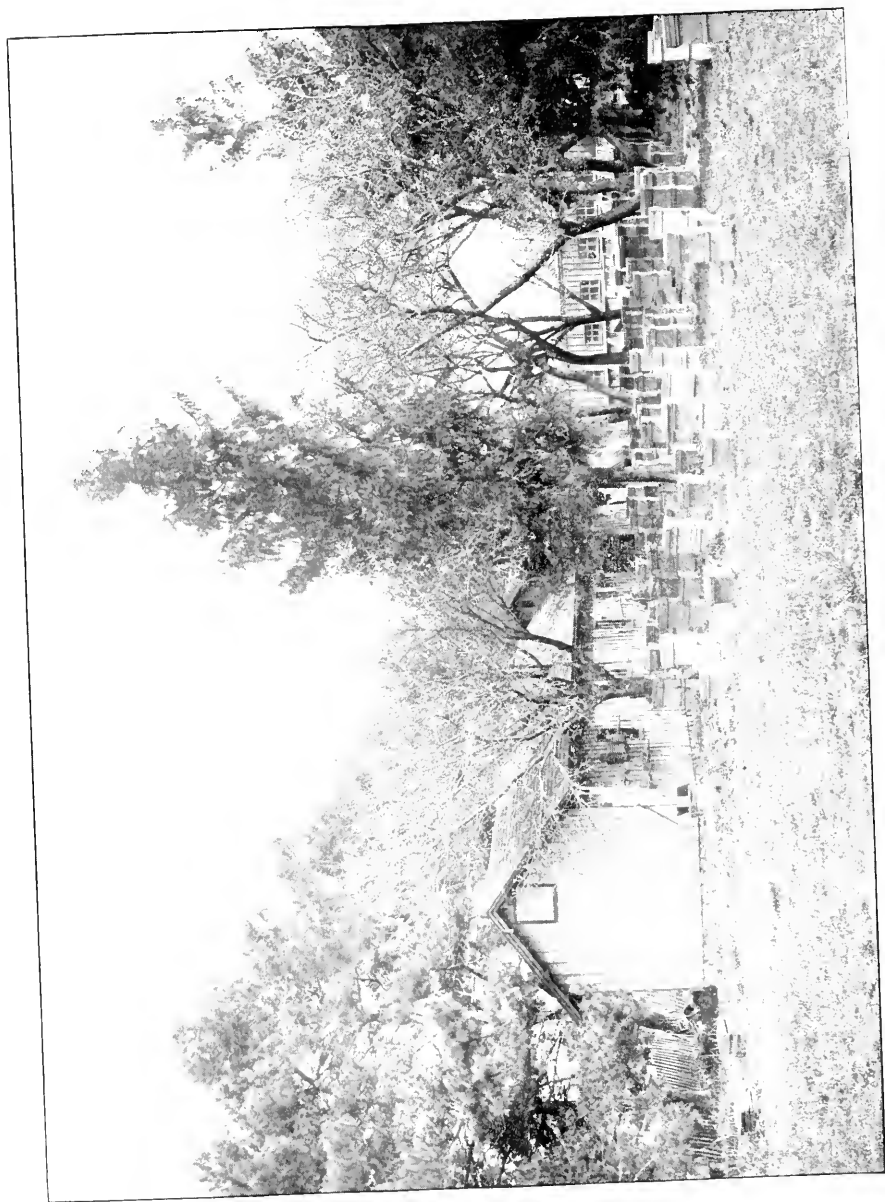
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Wintering House and Apiary of H. R. Boardman. East Townsend. Ohio.

The Bee-Keepers' Review.

A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor

VOL. XVI. FLINT, MICHIGAN, SEPT. 10, 1903. NO. 9.

A SUCCESSFUL WINTERING REPOSITORY ABOVE GROUND. BY H. R. BOARDMAN.

Mr. Editor:—Referring to my bee-house, in which you have become somewhat interested, I will say that it was built 25 years ago; and I have used it for wintering my bees, with entire satisfaction, during all of these years since. It was built in a permanent manner, has been kept well painted, and is in a good state of preservation now.

DETAILS OF CONSTRUCTION.

It is entirely above ground; is 50x12x7 feet high, inside, with double walls 12 inches thick, filled with sawdust, and sawdust on the floor overhead. It is divided into three rooms, two of which were designed to be used in winter for winter repositories for the bees. A room in the middle, between these two, is 10 feet square, inside, leaving the bee-rooms each 19x10 inside. There are two doors in this middle room, front and back. The windows all face the bee yard on the east; they tip on pivots in the center, to let out the bees, and fasten at the top with spring stops. They are fitted with shutters, inside, to make

the room dark as well as warm for winter. The floor is cement.

The middle room furnishes an indispensable ante-room to the bee-rooms in going in and out during the winter. It also answers an excellent purpose for a ventilating room through which the bee-rooms may be ventilated without admitting the outside air directly to the bees.

For a considerable time after the bees have been put in winter quarters they are not disturbed by the outside air, nor even by the light, if the weather continues moderate, but after a while it becomes necessary to darken the bee-rooms to keep them quiet; and for the same purpose I carefully exclude the direct drafts of outside air.

The room contains a stove used for various purposes, besides furnishing heat and ventilation to the bees in winter, when needed. The advantage of two rooms instead of one is apparent in setting out the bees when they have become restless. A part of them can be kept quiet and under control while the rest are put out.

SPECIAL VENTILATORS UNNECESSARY.

When I had my bee-house built, I thought that ventilation was the com-

ing solution of the wintering problem. I had two ventilating tubes or pipes, 14 inches square, one in each bee-room, reaching from near the floor inside into the chamber, which I ventilated by a cupola mounted on the center of the house, where the chimney now appears, and connecting with the chamber. This elaborate system of ventilation was all properly controlled by valves and traps, and designed to carry out the vitiated air somewhat as a chimney carries out smoke, so that the bees would keep in a healthy condition. It did not meet my expectation. The draft was the wrong way, and I abandoned the whole scheme as worse than useless, with no little disappointment.

FRESH, OUTSIDE AIR TOWARD SPRING NOT DESIRABLE.

I used to open the outside door to admit the fresh, cool air at night to quiet the bees down when they became restless, but I am sure it is a mistake to ventilate in that way. The bees will surely become quiet after admitting the fresh air, and lowering the temperature, but they will not stay quiet. It only increases the impulse to rear brood, just the difficulty that already exists. I have been able to keep the bees in better condition by excluding the outside air until the bees can be set out. I have never been able to maintain a uniform temperature in the bee-rooms, nor have I found it essential to successful wintering. A high temperature I find much safer than a low one; especially after the brood rearing begins at the approach of spring. By a high temperature I do not mean warm enough to drive the bees out of the hives, or to permit them to scatter over the room to die.

I have often been able to maintain a temperature of 60 degrees for a con-

siderable time without serious consequences, but not much above that. About 45 degrees has been generally accepted as nearly right for the winter repository. This is well enough for the fore part of the winter, but I prefer nearly 50 degrees, or even a little higher, towards the end of the season. In order to secure this high temperature, I must depend upon the warmth generated by the bees.

Experience has enabled me to determine about how many bees it will be safe to place in a room, and be able also to control the rising temperature in the spring.

For the last two winters I have put all of the bees in one room, holding the other two in reserve to supply fresh air, and have it under my control.

Last winter I put 110 strong colonies in one room in this way, almost as many as I would have put in both rooms, if both had been used, and with much better success in controlling the conditions to my liking. I was pleased with the results and it suggests some valuable improvements in the construction of winter repositories.

BENEFIT OF ARTIFICIAL HEAT.

I have had considerable experience with artificial heat, for a good many years, and it has usually been attended with good results. I often build a fire in the stove in the ante-room of my bee-house when the temperature keeps too low. By warming first this room, I can so gradually and gently raise the temperature in the bee-rooms that the bees only respond in a low murmur—a sure acknowledgement of their comfort and contentment.

The draft of the stove carries out the vitiated air near the floor, and that without admitting any drafts of fresh air from the outside. Here, then, is the perfect ventilator.

I like to put the bees in before severe cold weather, and in a falling temperature as they will be more quiet and handle better.

SECURING INDIVIDUAL VENTILATION FOR EACH HIVE.

In the bee-house the hives which are without bottoms are placed six inches apart, and tiered up, each over the open space below. The first row is set on hive-covers arranged in the same way. This gives abundant ventilation, and allows the dead bees to drop out of the hives.

I used to think it necessary for the welfare of the bees, to set them out for a flight during the winter, but I now prefer to have them remain in until they are set out to stay, which time depends upon the season.

I do think it necessary for the welfare of the bees to set them out of the winter repository for their first flight on a warm, pleasant day. I set each hive on the old stand from which it was taken. My hives are all lettered and numbered to correspond with the stands, which enables me to do this readily. All of the colonies that have been put in to winter quarters in normal condition I expect will come out in perfect order, and I am seldom disappointed.

E. Townsend, Ohio, Sept. 4, 1903.



COMMERCIAL ORGANIZATION MUST BEGIN LOCALLY. BY R. L. TAYLOR.

It would not require a great stretch of imagination to conjure up a National Commercial Organization of Beekeepers that would be able to control the price of honey, and to protect beekeeping interests in all their details. Thus, within easy driving distance of

my home there are perhaps a hundred persons directly interested, in a greater or less degree, in the management of bees and the production of honey; and one may easily imagine that of this number a majority at least fifty might be so impressed with the possible advantages of such an organization as to lead them to take an active and persistent interest in forming and sustaining a local society with the ultimate view of securing the paramount, all-powerful association. If that could be done here, the same thing could be accomplished in a hundred other places in Michigan, and a State organization would, as a matter of course, follow, with a constituency of at least five thousand at the outset. Then, of course, the same thing could be brought about in the other States, and there would result, as if by magic, a National Organization with two hundred thousand members!

MEN MOVE ONLY FROM SOME MOTIVE.

But this is a superficial view, and takes no account of the attractions that must be offered, and the obstacles that must be overcome. There is a difference between the "might" and the "can;" between the abstract "possible" and the "practicable." The citizens of Michigan might banish the traffic in intoxicants from her borders in six months' time, but, as yet, there is no audible sound from the dry bones. To make the possible practicable, a motive must be provided. Men will not move when every desirable advantage is intangible merely a dim spectre in the air or, if they do, they are liable to be confined in asylums for the insane. What definite, desirable object is offered of sufficient importance to stir men? Is it sentimental and social? Not these, I think. Sentiment sometimes displays itself as a

motive of exceeding strength, and it may well figure in efforts made for the extinction of the aforementioned traffic, but it can scarcely be supposed that it can be made to inflame the minds of men who are invited to act in an almost purely business matter. Nor can the object be a social one, for such are well provided for in a great variety of organizations already perfected. That is all a matter of course, for the very nature of the organization proposed excludes every motive but the financial one. The advantage to be secured must be a financial one, and it must be certain and substantial. It is not to be expected that the rank and file of bee-keepers are to be moved to action by any chimerical or indefinite and hazy proposition. Everyone will ask "what is there in it for me," and "who is to pay it," and "how responsible is he financially?" And this further question, "are the men who are to handle our product men of ability and experience in the sort of business it is proposed to have them undertake?" And then the troublesome query: "Are they honest and will they remain so?" "Are they to be under 'heavy' bonds?" No matter. Few bee-keepers will be found who are courting expensive lawsuits to enforce the penalty of defaulted bonds. Do the fears suggested seem fanciful? It is history that few great enterprises managed by men of limited experience escape dire misfortune.

Then an organization so extensive as the proposed "National" would, it would appear, be fairly worthy to be plied with the charges that are so freely made against the so-called trusts, viz., that they destroy healthful competition and make on their products prices that are unnaturally high. And the fine phrases used in defense that it is only to "control" the prices and not to make them "unduly

high" would hardly prove an acceptable answer. Besides, unlike the trusts, the National could not offer, as a reason for its existence, "greatly increased economy of production."

WHY LOCAL, OR COUNTY ASSOCIATION WOULD NOT SUCCEED.

To overcome the inevitable reluctance of bee-keepers to join blindly in the organization of such an association, it has been proposed in some quarters to have agents appointed to go about the country to organize local, County and State, associations to be subsidiary, sort of feeders, to the National. In my opinion such a course would be a dismal failure, or, if not a failure, a ridiculous mistake. Reasons for this opinion are not hard to find. Bee-keepers in this and most other States are so in a small way—farmers with a few bees—and are too scattered to warrant even a hope that either local or County associations could be made successful. Their social needs are already supplied in the different farmers' organizations, and the only inducement remaining, worth mentioning, would be the hope of financial profit; and this hope would appear dim enough when they considered the cent or two increased price per pound supposed to be realized from allowing the National to manipulate their meagre crop of honey, less their share of the agents' wages and expenses, and less their own time, trouble and expense attending the meetings. They would undoubtedly want to know what such local societies had to do, anyway, with enabling the National to sell honey at an increased profit.

Those with a considerable number of bees are wider apart still, and not enthusiastically inclined to take long journeys to attend bee-keepers' conventions, as our efforts heretofore in

that behalf witness. Moreover, on a little further consideration, they will be led to wonder what is the pressing urgency for an organization to dispose of their honey, when it now sells readily at satisfactory prices, without such outside assistance. They know that consumers, at least, pay a price sufficiently high, and they can get that price by retailing what they have, and with less wear and tear than they would experience in supporting a whole gamut of organizations, and shipping their honey to the hands of strangers.

As to the character of the crowning organization, it will not be questioned that what is wanted is one of strength and endurance. These qualities cannot well be attained by a mushroom growth. The oak, rather, should be the symbol. This would seem to indicate as to the proper course for those who are to have a hand in its formation to be one of patience and care, remembering that they are working comparatively new ground, and that safety requires circumspection.

LET THERE BE ORGANIZATION ONLY WHERE IT IS NEEDED.

But few words need be added to indicate sufficiently the course that seems to me advisable. Let all growth be natural—nothing forced—and no audience given to anyone who has an axe to grind. Where a need is felt, left action be taken by those who feel it. When several bee-keepers in the State of Michigan, or in any section of it, think they can dispose of their crop to better advantage by union, let them unite in such manner as seems best suited to their circumstances. If they are successful, their successes and mistakes will be a source of sound instruction to those of other communities who shall desire to take

like action. Thus each organization will be firmly cemented by a natural growth, through experience, and, if need appear, its roots and branches will reach out until they meet and intertwine with those surrounding it, and all shall become one great growth, furnishing shade to all of the whole land who seek its shelter.

Lapeer, Mich., August 14, 1903.



INTRODUCING QUEENS, AND HOW BEES FEED ONE AN- OTHER. BY ARTHUR C. MILLER.

"Errors like straws upon the surface flow,
He who would search for parts must dive
below."

Because I have found pearls where others have said there were no pearls, I find myself being assailed from all sides; unwilling or unable, to see for themselves, they find satisfaction in saying "it cannot be so because it is so contrary to the text books and accepted belief."

If the gentlemen who challenge my statements in regard to odor in queen introduction, and the method by which one bee gets food from another, will go to the bees and make the experiments and the observations that I have made, they can quickly satisfy themselves of the correctness of my statements.

SCENT PLAYS LITTLE IF ANY PART IN QUEEN INTRODUCTION.

In one editorial, in August Review, Mr. J. L. Lewis is quoted as follows: "Suppose a queen is taken from her hive and dropped into a colony having a laying queen. The bees will at once ball her and would kill her if left alone. We smoke them off and return her to her own bees. Now, will Mr. Miller explain why her own bees will at once pounce upon her and kill her,

the same as any strange queen, unless scent has something to do with it?"

If Mr. Lewis can so transfer the queen from her own hive to the stranger's as not to frighten her, she will be well received until she comes in contact with the queen of the colony. Again, if he will take the balled queen, confine her alone and without food for thirty minutes, and then let her walk quietly into her own hive, she will be well received. If odor has to do with it, why can we put comb, bees, queen and all safely from one colony into another? If odor is the prime factor, why is not a queen caged and carried next to one's body, where she is surely contaminated with strong human odor, always well received when given to a queenless colony? Frighten a queen in her own colony, and her own bees will often ball her at once.

Odor works only to this extent, that it probably acquaints one queen of the presence of the other. Such knowledge raises the combative spirit, and trouble ensues right off between the queen and the surrounding bees. There are scores of ways of testing the matter if one is so disposed.

Another editorial in the same issue refers to Mr. A. D. D. Wood's criticisms, on my statements to the effect that bees never offer food to the queen, as follows: "Mr. Wood then asked how I supposed a queen caged in a hive, with no food in the cage, managed to survive for days and weeks? She would have no opportunity to take food from the bees by force—it must be offered to her."

I would here ask the editor and Mr. Wood why so many queens under the same conditions die?

HOW ONE BEE FEEDS ANOTHER.

Let me again describe the manner in which food is obtained by one bee

from another. The hungry bee, queen, drone, or worker, accosts bee after bee until one is found who will yield the desired food; then the hungry bee puts her tongue into the other bee's mouth and proceeds to take all possible, the giving bee meanwhile not having unfolded her tongue. As soon as such a proceeding is under way, surrounding bees project their tongues and try to get a bit of the coveted pap, and not infrequently two or even three bees are simultaneously taking food from the same mouth. Generally, too, the "giving" bee has her abdomen slightly curved and contracted while the abdomen of the taking bee is palpitating the same as when taking honey or nectar.

Just how the hungry bee ascertains which bee has food, and how she persuades her to part with it, I can only guess at, but certainly the antennae play a very lively part. As to the force part: Not infrequently when the "giver" has for some reason seemingly tired of being "pumped," and she tries to back away, or turn from side to side, the taking bee seizes the "giver" by the "cheeks" and holds her fast. If Mr. Wood, or the editor, is uncertain as to which bee is giving, and which is taking, use a well fed young worker and a hungry drone. I do not know that the latter has ever been suspected of giving food.

The editorial further alludes to the case of the starved colony being revived by the few who are able to get food passing it on to the others.

Bees too far gone to be able to put their tongue into another bee's mouth, die. If man intervenes and gives warmth, more will revive than otherwise would, and if he puts a small drop of honey on the outstretched tongues of the faintly stirring bees, he can revive still more. As soon as the first few bees to get food create

heat enough to warm those about them, more are able to eat, and the case progresses until all revivable are up again.

To look at the feeding matter from another way, let us consider the structure of the tongue. For this purpose I would refer to the better text books. Then go and watch a bee use her tongue in a drop of honey. Then try to imagine two bees holding their tongues together long enough to permit food to pass from one to the other. Then sit down by a colony of bees and try to catch two at it.

Gentlemen you have the bees, see for yourselves. It is not difficult to prove the correctness of what I have said.

Providence, R. I., August 17, 1903.

Bee-Keepers' Review

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W. Z. HUTCHINSON, Editor and Publisher

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Flint, Michigan, Sept. 10, 1903

Michigan seems doubly desirable as a home, since taking my western trip.

Every Indian, Mexican and half-breed that I have seen owns a mongrel dog.

Ripe strawberries, all the year round, are some of the luxuries of California.

A small but choice collection of flea bites is one of the things I brought back with me from California.

Large Flocks of Angora goats were often seen near the railroad in passing through Arizona and New Mexico. They were always guarded by a dog and a boy or a man.

Water is the one great need of the arid regions of the West. Where this can be secured, the fertility is something truly wonderful. Millions upon millions of acres are now practically valueless, simply from this one lack.

Gee Jim was the name of the Chinese restaurant where several of us took dinner at Williams, Arizona. It was Hobson's choice with us, but the food proved palatable—t'was the idea of it against which we tenderfeet revolted.

Mexican Women, on the route to California, were often seen standing in the doors of mud huts or dugouts, babies in their arms, the latter dressed in Nature's garb only—and sometimes the women wore quite a profusion of the latter.

The adobe, or mud house, of Arizona and New Mexico, is the most homesick looking house that I have ever seen. It is one story high, with poles and some hay or mud on top for a roof.

It looks too much like a make-shift stable.

Mexicans and Indians are about the only track-hands, or section men, seen along the railroad, in New Mexico, Arizona, and California; in fact, it is doubtful if a white man would endure hard labor under the intense heat that prevails on these desert sands.

Officers Elected at the Los Angeles Convention are as follows: President J. U. Harris, Grand Junction, Colo.; Vice President, C. P. Dadant, Hamilton, Ill.; Secretary, Geo. W. Brodbeck, Los Angeles, Cal. While the choice of place of meeting rests with the Executive Committee, it will undoubtedly by St. Louis, Mo.

Near Kansas City, when going to the Convention, we saw the effects of the terrible floods of last spring. The force of a great body of water is almost beyond comprehension, but the massive steel bridges, twisted and piled in great heaps on the shore, were vivid illustrations in that direction.

The American Bee-Keeper deploras the existence of two factions in the National Association of Bee-Keepers. It says one faction has been called the "push," and sees no reason why the other faction need not be called the "would-be- push." It is unfortunate that there should have been any unpleasantness, but it looks now as though it was about over and the only and best thing for the officers to do is to go on about their business, paying no attention whatever to the "would-be-push." The time has passed when harm can come from this

source. I know of just two men who went to Los Angeles with a disposition to defend the "would-be-push," but when they saw how it could behave, they experienced a change of heart.

The Bark from Shag-Bark hickory is recommended in Gleanings, by R. L. Taylor, for use in smokers. The part used is the loose, outside bark that may be easily pulled off. Start the fire with rotten wood, and when the fire is well started with the bark it never goes out, gives plenty of smoke, with absolutely no sooty drip.

White sunshine, glaringly white, is the kind they have out West. I suppose this comes from the dryness and clearness of the atmosphere. There is a mellowness about Eastern sunshine not seen in the West. But few clouds are seen in the West, and these are also very white. It seemed good, in coming home, to once more see some color in the clouds and sunshine.

Foul brood may destroy a colony in a bee tree, leaving honey and combs infected with disease. This fact has been used as an argument to show the impossibility of entirely eliminating foul brood from a district, but Mr. France says the squirrels and the bee moth's larvae will soon destroy the combs and thus remove this source of contagion.

J. F. McIntyre, of California, has a floral family. His five daughter are named: Flora, Lily, Myrtle, Pansy and Iris. The only son, 11 days old when I was there, and over which there is

much rejoicing, is named Robert Wilkin, after his illustrious grandfather. By the way, the eldest daughter, Flora, extracted 16 tons of honey this season.



Formalin Gas has been experimented with by N. E. France, so he reported at the California Convention, and it seemed to destroy the germs in the unsealed cells, but not in those capped over. He had even had live bees hatch out of from combs soon after they had been fumigated. If it will not penetrate a capping sufficiently to kill a bee nearly ready to hatch, it does not seem reasonable to suppose that it will kill the germs of foul brood when sealed up.



The Spanish tongue I first heard spoken in California; and, oh, the music of it! The roll and rhythm; the softness and the accent. It is decidedly the language for the lover. When they had such a delightful language, why, oh, why, did they invent the angular English, the energetic German, and the chattering Russian? How I should love to learn and speak Spanish; and I would, too, if I lived where it was spoken.



Arthur C. Miller is to be commended for his efforts at correcting what he considers errors in the text books, but he must expect criticism—hard and strong and plenty of it. For instance, he may be correct as to the manner in which bees usually feed one another, but I would feel better satisfied if he would explain how a caged queen gets her food unless it is offered to her. It is true, as he says, that queens so

caged often die, but equally true that they often live—many days.



A telegram that I sent home from Arizona, when on my Western trip, cost me \$1.00. I presume that my face expressed a little surprise at the cost, as the operator remarked: "You may think that pretty steep, Mister, but the most of us Westerners are not out here for our health, but for the money there is in it." "I noticed that several days ago," was my reply, and you ought to have heard the laugh that went around the office.



California Bee-Keeping, as I saw it in my recent trip to the coast, will be described in the next Review. I visited such men as Messrs. Brodbeck, McIntyre and Mendelson, and took pictures of apiaries, sage brush, bean fields, orange trees, and the like, and these pictures will appear in the next Review.

By the way, I visited Rambler's old apiary, now owned by the Schaffner Bros., and secured a most picturesque view of it which I shall show with much pleasure.



Black Brood may possibly have made its appearance in Michigan. I recently examined two apiaries in the South-western part of the State, and found them terribly diseased; combs full of dead brood, no swarming nor surplus, and colonies dying at a rapid rate. There was no ropiness of the brood, or, at least, very slight, not much odor, and that more of a sour smell than like foul brood. In some colonies the dead brood had dried down and greatly resembled the foul brood scale. I cut out a piece of the

comb and showed it to Mr. France. He said it had some of the symptoms of black brood, and advised caution in regard to it.



Four-Piece Sections may yet become a necessity, owing to the scarcity of basswood. Gleanings, in commenting upon this, laments the enormous amount of labor that the handling, or use, of the four-piece involves. The putting together of the four-piece section does take more time, but it is of a kind of work that can be done by cheap help, besides, with proper tools or appliances, the difference in time is not so great as might be imagined. There is a tool in which it is only necessary to pick up the four pieces, set them in, and give it a slam, and the section is together. Bro. Root might be surprised to learn how many bee-keepers there are in the country who really prefer the four-piece section—I am on of them.



Squaws, dressed in gorgeous colors, their faces hideously painted, pap-pooes strapped to their backs, offered bead work and painted pottery at many places where our train stopped while en route to Los Angeles. The hideousness, to me, of some of the old squaws is something that must be seen to be understood. Their straight, black, coarse hair hangs in a tangled mass all around their shoulders, a strip being cut out in front, just above the eyes, to allow them to see. Then their faces are so wrinkled, and their eyes so sunken, and when the mouth opens and shows three or four blackened and broken tusks, the picture, to me, is one bordering upon the horrible. To me, the face of a cow or a horse is much more beautiful and wholesome.

Oh, the dreariness of the great plains, and the great American Desert. Miles, and miles, and miles of sand, rocks and cacti; hours and days of traveling with only the intense heat of the sun overhead. In the Great American Desert, the mercury often reaches 118 degrees in the shade. Fortunately, we passed through it in the night, but, by putting the hand out of the window, the heat could be felt coming up from the hot earth, something as it would feel in holding the hand over a hot cook stove. My bed fellow, Mr. France, admitted the next morning, that it was the most uncomfortable night he had ever passed. I never before realized what a journey overland, to California, must have meant in olden times. No wonder the trail was strewn with the bones of men and animals.



KNOW ALL CONDITIONS BEFORE DECIDING.

Charity is needed by both the scientist and the ordinary worker. In a recent letter Mr. R. F. Holtermann says that "Many mistakes are made in bee-keeping, and in other branches of agriculture, because all of the conditions are not studied before coming to a conclusion. The scientist is especially open to such error. We are all liable to make mistakes, and, instead of despising the scientist, as many do, we ought to lend a helping hand. I have some knowledge of the rudiments of chemistry, and find them a valuable aid in arriving at correct conclusions. We were recently told, by Arthur C. Miller, that exhausted atmosphere contains carbonic acid gas, which is heavier than the ordinary atmosphere. This is true enough, yet there are other laws. If not, the smoke from a chimney would come

out in the room, and not at the top of the chimney, for not only does the fire consume the oxygen, but it loads the air with material that is heavier than the ordinary atmosphere. I am too busy to write much, as I have 400 colonies working on buckwheat."



DEPLORABLE ECONOMY.

On the first day of my trip to California, I read in a newspaper an account of a man who denied himself many things that he might amass wealth. He would wear only the poorest and cheapest clothing. He denied himself love, "put his heart in cold storage," as the newspaper man wrote it, because a wife and children would delay his becoming rich. Rest and recreation were not his until he could count his wealth by many thousands. Then he bought fine clothes, "but they didn't fit upon a body bent and crippled with rheumatism." He married a wife, only to be haunted by the fear that she cared more for his money than for him. Both taste and digestion were lacking for enjoying the dainty dishes of food with which he would have gladly regaled his palate in his youth. In short, he denied himself many things that he wanted and could have enjoyed in his youth and early manhood, that he might save money for his old age, when the capacity for enjoyment had well nigh faded.

There may be a lesson in this for some of us.



THERE ARE ALL GRADES OF BEE-KEEPERS.

What a difference there is in bee-keepers! Some are so slipshod and slovenly, with hives sitting in a row close together on a plank—and some of them box hives at that. How dis-

couraging! It is for an Inspector of apiaries to get into such an apiary as that when looking for foul brood. Then there are bee-keepers of a little higher grade. They have movable comb hives, or hives that are intended to be such, but no foundation starters have been used, and many of the combs might as well be in real box-hives. Then there is another grade still higher, but it is not the highest. It is the man who aspires to be a pretty good bee-keeper, but he has too many other irons in the fire, and he neglects things. The frames are all stuck fast, and stuck together with brace-combs, and it is a task to get out a comb. Then there is the man who is a really first-class bee-keeper. His hives are all made exactly alike. He uses foundation; he keeps the brace combs scraped from the top-bars; his hives are level; the combs can be removed with the fingers with no prying from any knife or lever. Everything is orderly in his honey house. He has a place for everything and everything is in it. The covers are always put on square and true. Reader, in which class do you belong?



A CHANGE OF VIEWS.

When in Chicago, and I have the time, I like to call upon my friend, F. Dundas Todd, editor of the Photo Beacon. He is a Scotchman, and always has a good story to tell. While on my way to the Los Angeles Convention, I followed my usual practice, and the story this time was as follows: When attending, at Saginaw, Michigan, the Convention of photographers of Michigan and Ohio, Mr. Todd was called upon to criticise the pictures on exhibition. In accepting the task, Mr. Todd announced that he reserved the right to change his opinion every three minutes if he saw fit.

The next morning, while riding in the cars on his way home, a young man said that this assertion of Mr. Todd's had troubled him not a little, and he did not see how Mr. Todd could justify himself in making such an assertion. Mr. Todd asked the young man to look out of the window at a house they were passing. "Keep your eye on it," he said. "There, does it look the same now as it did at first?"

A moment later he said: "There, look again. Does it appear exactly as it did at first? Don't you get different views of it?" The young man admitted that he did. Mr. Todd asked him why it was that he got different views of it. "Because I am moving," was the reply. "That's it exactly," said my friend. "So long as you remain stationary you get the same view, you stagnate, but as soon as you begin to move, to progress, then you get a new view of the subject."

JOKES ON TWO EDITORS.

As the special car of bee-keepers, two days out from Chicago, was bowling along in fine style, and Bro. A. I. Root was the center of a lively, chatting group, he jerked his handkerchief from his coat pocket and showered the company quite freely with a pack of playing cards, that those who know Mr. Root will readily believe were placed there by some one that exactly this might happen.

Some of those present guyed Mr. Root quite unmercifully; but he took it all in good part and laughed with the rest of us.

And now for a little joke on myself. We stopped at Hutchinson, Kansas, for supper. Mr. France was behind me as we entered the dining room. As we approached the table, I noticed a lady walking in front of me. She

drew back a chair, as a waitress usually does for a guest, and I plumped myself down into it.

She said nothing, but drew out the next, as I supposed, for Mr. France, but, instead, she sat down in it herself. She was one of the guests from the train, and I had mistaken her for a waitress, and taken her chair, as she drew it out. Of course, I had to go back to the car and tell of it, that all might join in the laugh at my expense.

These are only samples of the funny things, by which the long journey was enlivened.

THE HABIT OF OVERCOMING DIFFICULTIES MAY BE ACQUIRED.

No man makes a grand success of life without first overcoming many obstacles. Some inherit will-power and executive ability, while others find it necessary to cultivate these attributes. The Presidents of railroads, the managers of great corporations, etc., possess these faculties in a high degree. As a rule, it is the possession of these traits of character that gives them their positions. Railroad companies must have for managers, men who do things. There must be no "if" about it. So many men complain of their hard luck. They could have accomplished this or that "if" it had not been for such and such obstacles. Successful men overcome these obstacles; and the world doffs its hat to the man who "does things." And right here let it be said that there is such a thing as cultivating a habit of overcoming obstacles. Every obstacle overcome develops a man's faculties in that direction, just as surely as muscles are developed by exercise. Let a man form the habit of giving up when he meets what seems like an insurmountable obstacle, and success will never be his. Careful investigation and

thorough consideration ought to precede every decision, but, once a course is decided upon, it should be abandoned only for the best of reasons—never on account of some obstacle. Overcome the obstacle; each one overcome gives added strength for the next; finally, the overcoming of obstacles, difficulties and discouragements becomes a fixed habit, and its owner never thinks of such a thing as failure.



SHALL THE NATIONAL PAY THE WHOLE COST OF SUITS?

Upon another page is urged the point that the National Association ought not to be expected to defend its members in all cases where they are threatened with prosecution—ought not to defend unless the members have the right on their side. There is still another point that needs consideration: Shall the Association bear the whole cost of the suit when it is thought best to defend? I believe the constitution is silent upon this point. It does say that one of its objects shall be to "defend its members in their lawful rights." But it does not say to what extent it shall defend them. I believe I am correct in saying that, in the past, the Association has borne only a part of the expense of a suit. I must admit that I do not know what proportion of the expense it has been customary for the Association to bear, but I do know that some members have supposed that it bore the whole of the expenses of a suit, and have been greatly disappointed when they found that they must bear a part of the expenses. Perhaps it might have been all right, in the earlier days of the Association, when there was not so much money in the treasury, to bear only a part of the expenses, but now that it has become more power-

ful and richer, it seems to me that it might better bear the whole expense of a suit. It is a nice thing to have a goodly sum in the treasury, but it is still better to have used the money for the good of the order. Piling up the money does us no good; it is using the money judiciously that does us good. If there is any good reason why the Association ought not to bear the whole expense of a suit in defense of the rights of a member, then this reason ought to be made known, instead of allowing members to join, expecting that they would be fully protected, when the protection is only partial.



A CAR LOAD OF BEE-KEEPERS CROSSES THE CONTINENT.

There is something new in bee-keeping. We are able to record an unprecedented event. A car load of beekeepers (26 in all, including one baby) spent one solid week together in a tourist car, going from Chicago to Los Angeles to attend the National Convention. For one week that car was our home, both day and night. Business, for the time being was dropped, probably forgotten, as we could not get at it if we would. That trip will linger long in the memory of those fortunate enough to have enjoyed it. The jokes, the stories told, the songs sung, the groups that formed here only to break up and reform in another part of the car, the long quiet chats of one friend with another, the sights that were seen and discussed, all combined to make one continuous round of enjoyment. I could sit down with Bro. A. I. Root and discuss northern Michigan, an hour or two; then slip into the seat with Bro. France and swap experiences with him regarding the queer customers we had to deal with in treating foul brood; presently Bro. York would come along and join

us, and if his talk and mine about bee journalism became too monotonous to Bro. France, he could go over and talk with Dr. Miller about things that the latter "didn't know." Thus matters went on until the day was done, and the porter tucked us away in our bunks for the night.

In the morning, the first thing would be to hunt up maps and time-tables and see "where we were at."

It was suggested that, sometime in the future, the National Association hold its annual convention in two or three of the principal cities, during the same year. For instance, hold one day's session in Chicago, then charter a car, or two if necessary, and let all who chose, go on to St. Louis, where another day's session would be held; from St. Louis a special car, or cars, would be secured for Denver, where there would be a third session of one day. A man could go from Chicago to St. Louis, or from St. Louis to Denver, or he could take in the whole trip. The dates when the sessions would be held would be published in advance, and bee-keepers living near any place of meeting could attend the convention at that point if they could not go on to other points. In short, it would be a sort of traveling convention swinging around the circle, so to speak, and the idea is worth considering.

THE GRAND CANYON OF ARIZONA.

Like Niagara Falls, the Grand Canyon of Arizona is indescribable with either pen or picture; in fact, the falls can be put into a picture while the canyon is too long for that—it can be shown only by piecemeal. Suppose you were walking along a comparatively level country, and should all at once come to a crack in the earth's surface, one mile in depth, 13 miles wide, and 275 miles in

length. The sides of this great rent are festooned, and grottoed, and pillared, and printed in many delicate shades of color.

Our car reached the canyon about six o'clock Saturday evening. The setting sun lighted up some of the walls, bringing out the reds and the yellows, while many of the depths were purple with the gloom of twilight. A look down, down, into the abyss actually made me dizzy, made my brain reel, made me feel like grasping something to keep from falling. Way down in the bottom, no, about half way to the bottom, could be seen several white objects that appeared about as large as bee hives, but we were informed that they were tents about 16x20 in size.

We are queer creatures. We want what we have not. If the natural path to the canyon landed us at its bottom, we would be very anxious to reach the top, that we might look down, consequently, as the natural path lands us at the top, and it is difficult to reach the bottom, there is where we wish to go that we may look up. Because of this human desire, years of labor and much expense have cut a trail that the adventurous may follow down a distance of seven or eight miles, and stand by the side of the rushing Colorado river that finds its way to the ocean through this great gorge.

This trip may be on foot, or a horse may be ridden, although there are places where the trail is so steep and narrow as to make it necessary to dismount and lead the horse. There are many places where a single misstep would send the tourist tumbling down thousands of feet. Some of our party made it on foot, and one rode a horse. They started at 8:30 in the morning, spent two hours at the bottom and returned about 4:00 P. M. A

few of us watched the trail from the brink of the chasm, and, occasionally, we could catch glimpses of the tourists. It took me quite a while to see and find them. I was looking for something larger. It was actually a strain upon the eye to keep them in view. Once they were lost sight of, they were found only by prolonged effort. Try to see a house-fly walking upon figured wall-paper 30 feet away, and you will get something of an idea.

Those who walked returned almost exhausted, and it was several days before they resumed their normal gait when walking.



BE CAUTIOUS, BUT DON'T STOP INVESTIGATING.

Out at the California convention I was greatly interested in the discussion on foul brood; particularly in one portion of it.

General Manager France had been describing foul brood, and question after question had been fired at him, many wishing to know if it was safe to use combs that had been treated with formalin, or to use those that had been used only for storage in the upper story, or if it would be possible to eradicate foul brood by cutting out the diseased cells. Mr. France thought an affirmative answer might be given to all of the questions, but there was need for great caution in such cases. Prof. Cook then arose and advised against thus temporizing and taking chances with the disease. His advice was to take no chance. As an illustration he cited a case of a father begging to see his boy who was sick in the hospital with diphtheria. At last he was allowed to see the boy and shake his hand. In three days the father was dead from diphtheria. He would look upon foul brood among bees the same as diphtheria was regarded among humans, and

take no chances. At this point, Dr. C. C. Miller arose and asked:

"Professor, wouldn't you save the bees?"

Prof. Cook: "Yes, I would save the bees."

Dr. Miller: "Was there not a time, Professor, when you would have destroyed the bees, too?"

Prof. Cook: "Yes."

Dr. Miller: "Professor, would you save the hive?"

Prof. Cook: "Yes, I don't know but I would save the hive, if it were boiled or thoroughly disinfected."

Dr. Miller: "The time was when everything was burned, bees, hives, combs, brood and all. Finally we learned that we could save the bees, then that we could save the hive, then we began saving the healthy brood, and melting the combs into wax. Had it not been for investigation we would still have been burning up everything. Now we are investigating and trying to learn if it is possible to save melting up nice combs. It may turn out to be a failure, but it is worth the trying. We can exercise caution, but let us not lay aside the spirit of investigation."



EMERSON TAYLOR ABBOTT BEHAVES UNSEEMLY.

The Rev. E. T. Abbott went to the Los Angeles convention with a set of amendments to the constitution that he, apparently, wished kept very much private. When invited before the committee on amendments, he not only refused to allow said committee to pass upon his proposed amendments, but so forgot his good manners as to reflect upon the character of the committee and the President of the Association.

After the committee on amendments had reported, Mr. Abbott turned over to the Secretary his amendments.

and started in to accompany them by a few remarks, beginning something as follows:

"Last year I presented a set of amendments, but through the pusillanimous action—"

At this point the chairman checked him, informing him that no abuse could be allowed. He made several attempts to continue his harangue, using language more picturesque than polite, but met such a storm of hisses, stamping and jeers as to be unable to be heard, until the chairman finally insisted that he confine himself to respectful language, under pain of being expelled from the room.

At this point some one remarked that, as Mr. Abbott had turned his amendments over to the Association, they were now the property of the Association, and the Association could do with them as it saw fit, and he moved that they be referred to the committee on amendments. The motion was promptly supported, when, as the chairman was putting it to vote, Mr. Abbott strode up to the desk, snatched the amendments out of the hands of the Secretary, tore them into bits, scattered them upon the floor, and started for the door, saying, "Good bye; Good bye; Good bye;" but he finally halted near the door and did not go.

At this point some one arose and said: "When those amendments were passed over to the Association, they became the property of the Association, and to forcibly remove them—well, we have a name for such an act—and I move the appointment of a committee to decide what action we shall take."

A committee was appointed and while there was a strong sentiment in favor of expelling Mr. Abbott from the Association, more moderate counsels prevailed, and the committee simply

reported in favor of adjournment.

It is very evident that, if Mr. Abbott continues, at another convention, the tactics begun at this, charges will be preferred and he will be formally expelled.

I regret exceedingly being obliged to publish this account of Mr. Abbott's behavior, but, judging from the past, he may again be an aspirant for office, and I deem it a duty to so inform my readers that they may be able to vote intelligently.



PROPOSED CHANGES IN THE ELECTION AND NUMBER OF THE DIRECTORS OF THE NATIONAL ASSO- CIATION.

As the National Association goes marching along, year after year, new thoughts, ideas and methods come to the surface. In regard to the Directors, two changes have been suggested to me by several persons during the last year. One of them I have mentioned before in the Review, and that is a reduction in their number. The argument in favor of the reduction is that it would be a great advantage if the Directors could be present at all of the National conventions. This attendance keeps them more in touch with the members, and bee-keeping in general, and allows them to hold a board-meeting, at which more real business can be transacted in two hours, than can be accomplished by months of correspondence. If the number is sufficiently reduced, the Association could afford to pay their expenses in attending the yearly conventions—something that could not be thought of if the present number is retained. In opposition to this view it is urged that a large body of men is more likely to make correct decisions than would be the case with a small body. That is, two or three men

might err in their decisions, but it would not be likely that the majority of a dozen would make a wrong decision. Over in Ontario there are 13 Directors in their Association, and their expenses are paid when attending the meetings of the Association, but there are two factors over there which allow of this: First, there are not such enormous distances to be traveled as we have this side of the line, and, second, the Association has a grant of \$500 annually from the government. It is possible that we may yet compromise the matter by cutting down the number somewhat, say, for instance, to eight, and paying a part of their expenses, say one-half of their railroad fare, or, possibly, all of it.

The other proposed change is that of allowing each State, or a group of States, to elect the Director who is to represent said State or group. The whole country at large can not know so well whom to elect in California as Director, as the Californians themselves know. The men in Michigan would have no trouble in deciding which man they wanted for their Director, but the men in Texas might be quite at sea in the matter. Now then, suppose we reduce the number of Directors to only eight; if any State in the Union contains one-eighth of the members of the Association, let the members in that State elect one of the Directors. If any two adjoining States contain enough members in the aggregate to make one-eighth of the membership, let those two States elect some man in one of those two States as one of the Directors. In some instances it might require three adjoining States to furnish enough members to entitle that district to a Director. In other instances, it might require half a dozen, or more, States; but by a little care in districting the country, each State, or a group of adjoin-

ing States, could elect its own Director. By this plan, that portion of the country containing the most members would get the most Directors, which is as it should be. If it should be possible that one State should have one-fourth of the members, then that State should have two Directors. In other words, we would have each Director representative of a certain number of members, just as each State is allowed a certain number of electors, according to its population, in electing a President of the United States. This manner of choosing the Directors strikes me very favorably.

A SUCCESSFUL BEE-KEEPER MUST BE A
BROAD-MINDED, THOROUGH
GOING MAN.

The Review sometimes touches—lightly—upon topics lying upon the outskirts of bee-keeping, perhaps entirely outside her borders; and the defense is this: That bee-keeping, successful bee-keeping, is something more than manipulation and methods. A man may be a good bee-keeper, in a narrow sense, yet not make a success of life as we understand that word. He may know how to winter his bees successfully, how to manage them through the trying months of spring, when to put on suppers, how to manipulate the colonies through the vexations of swarming, how to extract honey to the best advantage, how to bring all of his colonies through the season in the best possible condition for winter, in short, he may be a most excellent bee-keeper, so far as manipulation is concerned, and yet not make much money at the business. In other words, a successful bee-keeper must be something more than a bee-keeper in order to succeed. He must be broad-minded, far-seeing, alert, courageous, thorough, quick to take advantage of

any turn in affairs, in short, a man in the fullest sense. He must be able to use his reasoning powers to good effect, to be able to discover causes, and to reason from them to effect. He must be able to make good plans, and then to carry them out. He must do things. He will listen to the experience and advice of others, but, in the end he will decide for himself. The journals, for years, have been loaded with advice in regard to manipulation. They have treated their readers in the way that some parents bring up their children; they have thought for them, and told them exactly how to do and what to do. They have solved the problems for them. To a certain extent, it is right that the journals should give advice about manipulation. Perhaps this is their most important field, but their readers should also be encouraged, roused, led to think and act for themselves, to become broad, liberal-minded, first-class business men. They should be shown that bee-keeping, commercial bee-keeping, is not all bees—it is about half business. There are a few principles that seem to have been almost entirely ignored. For instance, if a man is to succeed, he must have a good location. Common sense ought to teach a man this, but see how many scrub along in a location wholly unfit for the business. Having the location, there must be a large number of bees kept. Having the bees and the location, then comes the working out of some system adapted to the locality, whereby the labor is reduced to the minimum.

No one believes more thoroughly in speciality than I believe in it, yet a man must not confine himself so closely to his specialty as to become narrow minded. He must know something of what is being done in other lines of business aside from his own.

He better have a hobby, something that he does simply for the pleasure of doing it. His hobby may bring him in some money, but it should be something aside and different from his regular work, something that he is not compelled to do, that can be laid aside or taken up at pleasure, the doing of which brings real pleasure—the same as photography is my hobby.

The Review's most earnest desire is to see bee-keeping become as safe, pleasant, and profitable as any rural pursuit. To have it become a safe business instead of a precarious avocation. Nothing can be more conducive to success in that line than in helping its readers to become men in the highest sense of the word; and that is why it sometimes contains items that are not strictly in the line of manipulation bee-keeping.



MEMBERSHIP IN THE NATIONAL NOT A GUARANTEE OF DEFENSE IN ALL CASES.

Many seem to have an impression that if they join the National Association, said Association will defend them against any attack, regardless of the merits of the case. They seem to regard it as a sort of insurance against any loss by litigation. They seem to believe that their membership in the Association is a sort of license that allows them to keep as many bees as they please, anywhere they please, to cause neighbors any amount of annoyance, yet the Association will stand by them, encourage them and defend them.

As I understand the matter the Association does not defend its members unless they are in the right, or it is believed they are in the right. I have investigated at least three cases where it was not thought best to defend, and the owners of bees were advised to

move their bees out of town. In the heart of a city or village is not the place in which to maintain a large apiary. There is probably not a reader of these lines who would not find the bees a great annoyance if he lived close to a large apiary owned by another man. There is an important point here—who owns the bees. I know that I should not keep an apiary where the bees were a great annoyance to my neighbors, and I believe the Association ought not to encourage or defend such a course.

It is evident that the bees are many times made an excuse for complaint, when the real trouble has its origin in something else. All these cases need careful investigation. If the bees are simply an excuse for prosecution, then I think the Association ought to defend.

There is still another point that needs consideration: Shall members be assisted in the prosecution of thieves who may have stolen their bees or honey? As a rule, I should say, no. I think there would be just as much reason in calling for help if bees from neighboring apiaries should come and rob a few colonies; or if a cow or a wagon should be stolen from a bee-keeper. Theft from an apiary is a crime, and the ordinary law will punish the offender without any assistance from the Association.

As a rule, I think defence should be confined to those cases in which the results of the suit will exert some influence upon the members as a whole—like the establishing of some precedent that will influence subsequent decisions.

I realize, however, that we can not have any hard and fast rules. Much must be left to the judgment of the General Manager; or, in important cases, to a decision from the Board of Directors.

EXTRACTED

CHANGE OF OCCUPATION.

It is not Often Desirable, and is Usually Accompanied by Loss.

If a man is fully decided that he is engaged in an undesirable occupation, one for which he is unfitted, he can not get out of it too soon, but if he has looked the ground all over, and considered every important point, and knows that, on general principles, he is engaged in the occupation for which he is best adapted, how foolish to throw it up for something else, simply because of some temporary embarrassment or failure. When visiting Mr. E. D. Townsend, of this State, this summer, and talking over the successes in bee-keeping, he remarked: "I have noticed that it is the stayer who wins." I am reminded of all this by a little editorial in the last issue of the Rocky Mountain Bee Journal. Our good friend Morehouse is, withal, something of a philosopher, and close observer, and, besides this, knows how to put his conclusions on paper in a delightful style, hence I take pleasure in copying two paragraphs from this editorial. Bro. Morehouse says:

"Beekeeping, like all other rural occupations, has its ups and downs, its flood tides and its ebb tides, its seasons of success and failure. Nothing about it is absolutely certain. But the man or woman who has a genuine love for it, whose enthusiasm is not dampened by failures and disappointments, but who makes it the subject of hard toil and study and sticks to it with the grim determination of winning, will certainly reap satisfactory rewards.

And withal, the bee-keeper who, in this kaleidoscope age of progress,

practices the false economy of doing without a bee journal (all of them taken together would hardly exceed in cost a first-class magazine) will always keep about twenty-five years behind the times."

A GOOD BEE BRUSH.

How to Make one out of a ten-cent Wisk Broom.

In the handling of bees, especially in the production of extracted honey, a good brush for brushing bees off the combs stands next to the smoker in importance. I have never found anything more convenient than a large quill from the left wing of a turkey, but these are not always easily obtainable, at all seasons in all parts of the country, while a ten-cent whisk broom is, and Mr. Elias Fox, in a short article in *Gleanings*, tells how this broom may very quickly and easily be made into a first-class bee-brush. He says:

"There has been so much said in the journals relative to bee-brushes that I want to add just a few words. It seems to me that there has never been a first-class brush described; and it seems to me that, when we revert to a bunch of weeds, we are not making much advancement, aside from the untidiness of the apiary in having weeds growing so plentifully that we can grab up a handful at every hive. We can all buy the best bee-brush at any store for 10 cts.; and that is, just an ordinary whisk-broom. Tack a sheet of sandpaper on your workbench or on a board, and take hold of the handle of the whisk-broom with one hand, and with the other one press the end of the brush down flat on the sandpaper, and then pull it across a few times, and you will have all the stiff points cut down so it will be pliable and soft, and no

danger of mutilating the cappings. When brushing, hold the brush flat to the comb, or practically so; and if it gets daubed with honey, dip it in a dish of water, and it will be clean again, and the moistening makes it more pliable. I have one I have used for fifteen years, and it is good for as many more. I always wet it before beginning my day's work."

WINTER PREPARATIONS.

In their Perfection often lies the Crop of the Succeeding Year.

Too many of us wait too late in making any needed preparations for winter. Wintering is the one great problem, or one of the great problems, in the East and North, but there are some things that require attention even in the warmer South and West. Editor Morehouse, in his *Rocky Mountain Bee Journal*, gives some excellent advice on this subject. He says:—

"It has been truly said by some apicultural savant that the time to begin preparations for the honey flow is the season before. With a little modification, this, also, applies to the preparation of colonies for wintering. Luckily, such preparations place the bees in the best possible condition to be in readiness for the next honey flow.

The stereotyped advices in regard to preparing colonies for wintering deals almost wholly with packing, ventilation, sufficiency of stores, etc., and but little stress is laid upon condition, which may be defined as age of queen, strength in bees and proportion of young bees to the colony. Sufficiency of stores, also, should be included as one of the necessary preparations to be made early in the season. Usually, wintering preparations are deferred until late in the fall, when it is too late to cure any defects that

may be discovered in the general condition of the colony except, perhaps, the giving of additional stores.

States are such that condition is the measure of success in wintering, regardless of any extra protection from cold and storm. It is a fact that, if a colony is provided with a vigorous queen, plenty of young bees and ample stores in easy reach, other so-called essentials may be disregarded with impunity. The work of preparation should begin immediately after the close of the honey harvest, and may be continued, if necessary, and the weather is favorable, well up into October. We make the following specific recommendations:

1. Requeen with the best honey gathering stock in the apiary (other qualifications being equal) all colonies whose queens have seen two seasons of service. Some good queens will be displaced by adhering strictly to this rule, but it is better to occasionally pinch the head of a good queen than to run the risk of carrying over several worthless ones.

2. One disagreeable trait of the Italians is to gorge the brood nest with honey so that late in the season there is little room available to raise young bees. The old bees soon die off, and spring finds the colony heavy with honey but so reduced in bees that half of the harvest is passed before the colony can be gotten into shape for super work. This condition can be remedied now with a little work. Remove two or three of the frames of solid honey and insert in their place frames of empty worker comb. Uncap a little of the honey at the lower side of the remaining frames. This gives the queen a chance, which, if she is worth anything, she will not be slow to improve. At least two sets of bees will be reared and a suitable force provided whose

period of life will extend far into next spring. The frames of honey may be extracted, or they may be set aside and fed back to the colony next May, when the honey will be valuable as a stimulant to brood rearing.

3. All colonies deficient in stores and bees should be fed. The feeding will not only provide the needed stores but stimulate the rearing of the necessary force of bees.

A little attention now to these details will lay the foundation for a good crop next season, and is really work of the very greatest importance."

GETTING QUEENS FERTILIZED.

How the Output of Laying Queens from an Apiary may be Doubled.

I presume many of my readers know that for a dozen years, or thereabouts, while living at Rogersville, I made a specialty of queen rearing. By the way, it is one of the most fascinating occupations in which I was ever engaged—a most fertile field for invention. It did not take me long to discover that the great expense and difficulty was in getting the queens fertilized and laying. I often remarked that I would consider it a good paying business to furnish virgin queens, or ripe cells, at ten cents each; and this at a time when I was getting a dollar apiece for laying queens. Nine-tenths of the cost of rearing queens comes in after they are hatched. When I first began queen rearing it was thought necessary to leave a nucleus queenless about three days before giving it a cell or a virgin queen, but I was not long in discovering that a newly hatched virgin could be given a nucleus at the same time that the laying queen was

removed. This allowed me to get a laying queen from a nucleus about once in nine or ten days instead of once in thirteen days. I tried to introduce virgin queens that were several days old. If I could have succeeded it would have still further shortened the time, but I never could make a success of introducing a virgin that was over three days old. A newly hatched virgin was always accepted, but the older she became, the greater the difficulty in introducing her. Right in this line I am happy to say that Mr. Geo. W. Phillips, the apiarist at the A. I. Root establishment, has hit upon a plan whereby a virgin several days old may be released in a few hours after the removal of the old queen. Gleanings describes it as follows:—

"Our Mr. Geo. W. Phillips, of the apiary, has struck upon an idea which, if not new, is something I have not seen in print. The bane of all queen-rearing yards, or in some, at least, is in getting queens fertilized. It is easy enough to make artificial cups; to graft them with royal jelly and selected larvae; it is easy enough to get large, beautiful ripe, peanut-shaped cells; it is easy enough to get the occupants hatched; but getting them fertilized—aye, there's the rub. Mr. Phillips has shortened the process by nearly a half, and at the same time reduced the risk of loss. Well, what is it?

Here is a colony, we will say, that is queenless. Instead of giving it one caged virgin, to be released on the candy plan, he gives to it two of flying age; but the loose slide protecting the candy is removed, exposing the food in one cage, leaving it in the other cage covered by the slide. The bees will release the queen of the first mentioned. In a day or so she will become fertilized, and go to laying. The other virgin is kept caged in the mean time. As soon as queen No. 1 is laying,

she is taken out, and at the same time the slide covering the candy to the other cage is set back, the bees release queen No. 2. Before that is done, another virgin is put into the hive, caged with the candy protected. Queen No. 2 is accepted, and ere long begins to lay. She is removed, and the slide of cage No. 3 is slid back, and another virgin put in, and so on the cycle proceeds. The point is here: Both queens while in the hive acquire the scent of the bees and of the comb, so that when one queen is removed the other queen is already introduced except releasing, which the bees do in a few hours, and she again is in a fair way to become the mother of the flock. During the interim between the time the queen is released and when she becomes laying, the queen is acquiring the scent of the colony.

But Mr. Phillips goes one step further. Here is a colony that is not queenless, but we wish to sell the queen in two or three days. He accordingly cages the virgin in the hive, and three days after removes the laying queen, exposes the candy of the caged virgin so the bees can release her, when she is immediately accepted. There, don't you see there is a lapse of only a few hours of actual queenlessness? We will say that, in five hours after the laying queen is removed, the virgin is stalking abroad over the combs, quite at home.

This thing is no experiment. We have been testing it for weeks to see if it would work under all conditions.

If the virgins are hatched in nursery, and a supply of them is kept on hand, no colony need be queenless more than long enough for the bees to eat out the candy, which I should say would take about five hours as we provision the cages. By this plan one can get almost a double output of queens.

Book on South Dakota.

A new book on South Dakota has just been published by the Chicago, Milwaukee & St. Paul Railway. It describes the agricultural and stock conditions in the state, gives the latest stock reports, tells about the present opportunities there, and is well illustrated. Sent on receipt of two cents for postage.

F. A. Miller, General Passenger Agent, Chicago.

Robert C. Jones, Michigan Passenger Agent, 32 Campus Martius, Detroit.

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Eustis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

WANTED:

Extracted Honey.

Mail sample and state lowest price delivered at Cincinnati. Will buy *Fancy White Comb Honey*, any quantity, but must be put up in no-drip shipping cases.

C. H. W. WEBER,
tf 2146-48 Central Ave., Cincinnati, Ohio.

Please mention the Review.

No more weak, dysenteric or foul broody stocks.

PUNIC BEES

(APIS NIGRA)

The bees of the future.

These marvellous bees have been in England, ever since 1886; are far superior to any others, are being adopted in Sweden after 5 years trial and by everyone who tries them.

The truth about these bees is given in the first 7 numbers of the "Bee Master" sent post free to any address for 30 cents.

Virgins, each, 60 cents; doz., \$6.00. Fertile, untested, \$2 00; tested, purely mated, \$6.00 each, post free. Guaranteed against loss in transit, introduction, mating (virgins), foul brood and winter dysentery. Address,

JOHN HEWITT & CO.

Brunswick Works,

6-03-41

Sheffield, England.

Names of Bee-Keepers

TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged in alphabetically (in the largest States), and, although this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a type writer, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly, in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky..... 182	N. C..... 60
Ark..... 130	Kans. 350	New Mex. 56
Ala..... 80	La..... 38	Oregon... 104
Calif... 378	Mo..... 500	Ohio..... 1120
Colo.... 228	Minn... 334	Penn..... 912
Canada 1200	Mich.... 1770	R. I..... 46
Conn... 162	Mass.... 275	S. C..... 40
Dak.... 25	Md..... 94	Tenn..... 176
Del..... 18	Maine... 270	Tex..... 270
Fla..... 100	Miss.... 70	Utah..... 68
Ga..... 90	N. Y.... 13125	Vt..... 200
Ind..... 744	Neb..... 345	Va..... 182
Ills.... 900	N. J.... 130	W. Va.... 172
Iowa... 800	N. H.... 158	Wash.... 128
		Wis..... 625

Comb Honey

Is profitably produced only when several important factors are combined. First, we must have the right kind of bees. We all know that there is not only a vast difference between the different varieties, but also a variation in strains of the same variety. Just which are the best bees for producing comb honey, *why* they are best, and how to secure them, is told in one of the chapters of **ADVANCED BEE-CULTURE**.

When bees of the right kind have been secured, then comes the matter of using the right kind of hives, fixtures, sections, etc., to secure the best results with the least labor; and **ADVANCED BEE-CULTURE** has a chapter on "Hives and their Characteristics;" and another on "Sections and their Adjustment on the Hives."

Bees may gather large quantities of white honey, and be so managed as to put very little of it in the sections; or they may be so managed that nearly all of it will go into the sections; all of which is explained in one of the chapters of **ADVANCED BEE-CULTURE**.

Comb foundation costs money. Notwithstanding this, its use is very profitable at some times and in some places. Under other conditions it worse than wasted. Read **ADVANCED BEE-CULTURE** and learn *why*.

ADVANCED BEE-CULTURE is a book of 32 chapters, describing the most advanced methods of bee-keeping from the beginning of the year through the entire season.

Fifty cents is the price of the book; or it and the **REVIEW** for one year will be sent for \$1.25.

W. Z. HUTCHINSON, Flint, Mich.

Queens

Golden and Leather colored Italian, warranted to give satisfaction. Those are the kind reared by **QUIRIN THE QUEEN BREEDER**. Our business was established in 1888. Our stock originated from the best and highest priced long tongued, red clover breeders in the U. S. We rear as many and perhaps more queens than any other breeder in the North. Price of queens after July 1st, Large Selected, 75c, six for \$4.00; Tested Stock \$1.00 each, six for \$5.00; Selected Tested \$1.50 each, six for \$8.00; Breeders, \$3.00 each; Two-frame Nuclei (no queen) \$2.00 each. Special low prices on Queens in lots of 25 to 100.

All queens are mailed promptly, as we keep from 300 to 500 on hand ready to mail. We guarantee safe delivery to any State, Continental Island, or European Country. Our circular will interest you. It is free.

Address all orders to

QUIRIN THE QUEEN BREEDER,

5-03-01

Parkertown, Ohio.

Tennessee Queens



Daughters of Select Imported Italians, Select long-tongued (Moore's), and select, Straight 5-band Queens, bred $3\frac{1}{2}$ miles apart, and mated to select drones. No bees owned within $2\frac{1}{2}$ miles; none impure within 3, and but few within 5 miles. No disease. 30 years' experience. Warranted queens 60c each; tested, \$1.25 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Please mention the Review.

Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-25, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. They have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902.

Mr. Atchley, Sir:—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 140 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm, each stored 28 pounds of honey; so you see I have 11 colonies from one, and 56 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen or heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 56 pounds of honey. If any of you scientific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I want no better. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3- and 5-banded Italians, Cyrians, Albino, Holylands and Carniolans, bred in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$9.00 per doz. All other months, 75c each, \$4.25 for six, or \$28.00 per doz. Tested queens of either race, from \$1.50 to \$3.00 each. Breeders from \$3.50 to \$6.00 each. 1-2 and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY

P. O. Box 79, Beeville, Bee Co., Texas

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co., Sheboygan, Wis.

PROVIDENCE QUEENS PROVE THEIR QUALITIES.

The product of twenty years careful and painstaking breeding. Contain the blood of the finest races known. They are hardy, active, long lived, strong flying bees, developed under the trying conditions of New England climate. Unexcelled honey gatherers.

Warranted queens \$1.00,

Tested queens - \$1.50.

LAWRENCE C. MILLER,

Box 113, Providence, R. I.

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

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\$QUEENS - \$BEES - NOW.

A. L. SWINSON, Queen Breeder, furnishes best to be had in U. S. First-handed warranted queens, \$1.00. Tested \$1.50. Breeders, 75 to \$1.00. American Albino Italians, and Adels mated to Albinos.

SWINSON & BOARDMAN,

Box 358, Macon, Ga.

Please mention the Review

The Choicest of Tested Queens

By return mail, \$1.00 each.

Three-banded Italians, from the best imported and home-bred mothers. Every bee-keeper knows that these are the best best honey gatherers. If you want strong colonies and full supers, try our queens, you will not be disappointed. Safe arrival and satisfaction guaranteed. Tested queens \$1.00 each, untested, 75 cents, \$8.00 per dozen.

J. W. K. SHAW & CO.

Loreauville, La.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross.

Shipped from New York or from factory.

Send for catalogue to

J. H. M COOK, 62 Cortland St., N. Y. City

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BEEES FOR BUSINESS.

One of the most prolific queens I ever owned was imported by the U. S. Department of Agriculture, from the province of Bergamo, Italy, during Sept. 1901, and sent to me to be tested. In all my experience I have not seen more or better bees for business produced by a queen. A nucleus formed with this queen—one comb of brood and enough bees to cover three combs—filled a 10-frame hive in 30 days with brood and honey, this year, and with the same treatment filled the hive and stored forty lbs. of surplus honey last season. Swarms headed by her daughters and lived on 10 drawn combs, completed 56 sections in 15 days, capping them smooth and white, and are at this writing (May 23) working vigorously on the second lot.

Daughters or grand-daughters of this queen will be mailed promptly for \$1.00 each, or \$9.00 per doz., and the best golden queens for the same price. Money Order office Warrenton.

W. H. PRIDGEN,
Creek, N. C.

7-2t

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We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest

Send for Catalog

MINNESOTA BEE-KEEPERS' SUPPLY MANUFACTURING CO.
Charles Mondeng, Prop.

Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

Bee-Keepers

It is a conceded fact that the bulk of the honey of the future is going to be produced in the irrigated portion of what is known as "Arid America." If you are interested in the progress of apiculture in this vast region, you should subscribe for the

Rocky Mountain

Bee Journal,

a twenty-page monthly; price 50 cents per year.

This is now the only bee publication west of the Missouri river. We have several hundred eastern subscribers, and have still room for more. Write for free sample copy. Address

H. G. Morehouse
Boulder, Colo.

ROOT'S GOODS

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Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

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The Bee-Keepers' Paradise.

300,000 Acres of Wild Land for sale, in the famous Fruit Belt Region of Michigan, at low prices and on easy terms.

These lands are especially adapted to fruit culture, all the most desirable fruits being cultivated with especial success.

These uncultivated lands also produce immense quantities of wild berries, from which large crops of honey are obtained, at a good profit to the Bee-Keeper.

Write for particulars and circulars.

"No trouble to answer letters."

Address:

J. E. Merritt,
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Michigan Land Co.,
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Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest, it has the brightest color and sweetest odor. It is the most transparent, because it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation for cash

a specialty. BEESWAX ALWAYS WANTED at highest prices. Catalog giving

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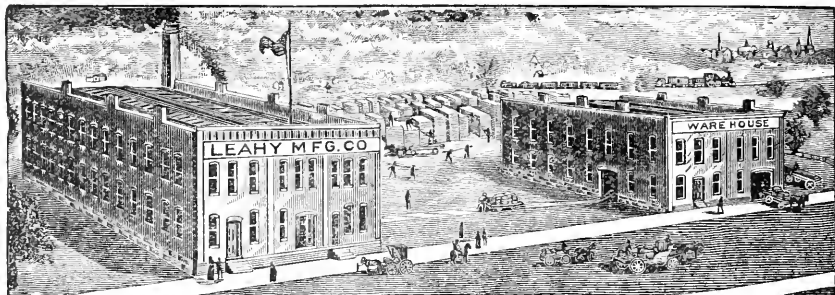
with prices and samples, free upon application. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin

E. Grainger & Co., Toronto, Ontario, Sole Agents for Canada.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price; only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,
JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Notingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*. Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,
SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

6 Years

This will interest you.

DULUTH, Minn., April 24, 1903.

Please send me a box of **Yellowzones** for the enclosed \$1.00. We have used this remedy, now, for six years and have increased the scope of their use until this is about the only remedy we make use of.

(Rev.) S. C. Davis.

This I have always claimed—that the more you know of

YELLOWZONES

and the longer you use them the better you will like them. And, further—that they are *Absolutely Unequalled* as a general household remedy. Just read that testimony again. A man doesn't send his dollars time and again, year after year, for the same remedy unless he's getting *mighty good results!* You know that. 100's of substantial beekeepers have been my customers just as long as he, and their kind words and *continued patronage* tell the same story.

If you keep but One Remedy in the House it should be YELLOWZONES.

\$1.00 per Box of 150 Tablets.

Trial size 25 cents.

Your money back, and *Another Box* if not satisfied.

W. B. House, De Tour, Mich.

Please mention the Review.

THE AMERICAN BEE-KEEPER,

FALCONER, N. Y.

Is one of the leading illustrated monthlies of the world, and it is sent three years for one dollar, in advance. Sample copy free.

Please mention the Review.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

SPECIAL ADVANTAGES FOR THE MANUFACTURE OF BEE SUPPLIES.

RIVER FALLS, Wis., April 28, 1903.

W. Z. Hutchinson, Flint, Mich.

Dear Sir: On March 17 we had a severe flood. My old mill dam, which has stood for 35 years, gave way, and I was obliged to remove it entirely. I purchased a power immediately above, and am now engaged in erecting a 26 foot dam which will make a total fall of 50 feet, and supply water-power for the greater part of the year in excess of 100 horse-power. I will enlarge the hive department, and put in some new labor saving machines, which, together with cheap power, and cheap lumber, and the best help I can secure, will, I hope, enable me to build up one of the finest Bee Supply Factories in the world. I aim to supply the Western trade, and it is plain to see that I have natural advantages which my friends in the East do not have, and can never enjoy. We will be running again within a month, and look for patronage from old and new friends.

W. H. PUTNAM.

5-03-1f

River Falls, Wis.

WANTED—One or two tons of honey (4X5 sections preferred). Correspondence solicited from parties in this state, giving lowest cash price, etc. If favorable I will call, if not too far away.

A. W. SMITH,
Birmingham, Mich.

10-63-2t

Please mention the Review.

Superior Stock



For several years I have been selling a strain of bees that I have called the Superior Stock. While I often receive testimonials in regard to their superiority, it is very seldom that I publish one. Sometimes the temptation is too great to be resisted, and this seems to be one of those occasions. Here it is:—



North Kingsville, Ohio, Aug. 24, 1903.

Mr. W. Z. Hutchinson,
Flint, Mich.

Dear Sir:

The tested queen you sent me in 1900 is still prolific. Her colony and that of one of her daughters, in 1901 stored as much honey as **ten** colonies of hybrids. It was not a very good year for honey but there was plenty of room on the red clover for The Superior Stock. Hybrids gleaned a little dark honey from various sources while the Superior Stock stored white honey. The Superior Stock is rightly named.

Yours truly,
HERMANN E. CROWTHER.



Remember I guarantee safe arrival, safe introduction when directions are followed, purity of mating, and entire satisfaction to the extent that the queen may be returned any time within two years, and the money will be refunded, together with 50 cts. extra to pay for the trouble. The price of a queen alone is \$1.50, but I will send the Review one year and book your order for one of these queens to be sent next spring, for only \$2.00.

W. Z. HUTCHINSON,
Flint, Michigan.

Victor's Superior Italians

Go by Return Mail, and are Guaranteed to Give Satisfaction, or Money Refunded.

I am ready with the same old true and tried stock of Italian queens and bees as of old. My queen-mothers in yards No. 1 and 2 are serving their fourth year in that capacity, 1900-1903. Their daughters have pleased The A. I. Root Co., W. Z. Hutchinson, O. L. Hershisser, G. M. Doolittle, R. F. Holtermann, F. B. Simpson, and many others prominent in apiculture. In fact, every customer has been pleased as far as I have heard. I COULD FURNISH HUNDREDS OF THE VERY STRONGEST TESTIMONIALS, but space forbids. Practically all the queens that I have sent from these yards were daughters and grand-daughters of the two "Oil Wells," as we often call them. Untested queens, \$1.00 each; select untested, \$1.25 each; tested, \$2.00; breeders, \$3.00 to \$7.00. Send for illustrated price list.

W. O. VICTOR, QUEEN SPECIALIST WHARTON, TEXAS

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

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BUY A BUZZ - SAW,

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

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Will save money by using our Foot Power Saw in making their hives, sections and boxes.

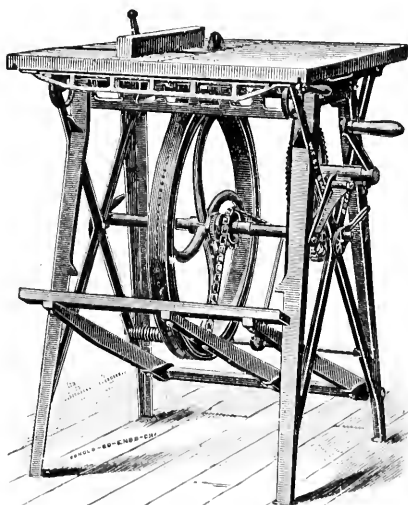
Machines on trial.
Send for Catalogue.

W. F. & JNO. BARNES CO.,

384 Ruby St.,

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7 -02 24t





VIEW IN GRAND CANYON, ARIZONA.

PHOTOGRAPHED BY W. Z. H.

One mile deep; 13 miles from point of view to opposite brink; Colorado river 1,500 feet below the lowest visible point; nine tents in a cluster between points of shadows.

The Bee-Keepers' Review.

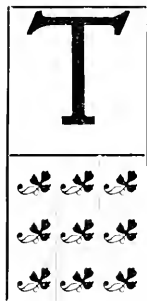
A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor

VOL. XVI. FLINT, MICHIGAN, OCT. 10, 1903. NO. 10.



THE CELLAR WINTER-
ING OF BEES. BY R.
L. TAYLOR.



One who proposes the building of a cellar to be used as a receptacle for his bees during winter should first inform himself with regard to the advantages generally attributed to that method of wintering bees, as well as with regard to its disadvantages, so that, in building, he may give his cellar such a character as to secure, as far as possible, the former, and to provide as best he may against the latter. Accordingly, these advantages and disadvantages first claim our attention.

PROTECTION THE CHIEF ADVANTAGE OF
CELLAR WINTERING.

The chief advantage of this method of wintering bees is the protection it gives them against the severe weather of winter. I call this the chief advantage—I might say the only advantage, for conserving the vigor of the bees, decreasing the per cent. of lost colonies, and the greatly increased economy in the consumption of stores, are all advantages resulting from protection, and, therefore, do not call for consideration in this connection.

PROPER PROTECTION AND CONVENIENCE
OF ACCESS ARE TWO MOST IMPOR-
TANT POINTS.

The disadvantages, as I look at it, are the liability that the temperature will have a tendency to run too high when the sun travels north in the spring, thereby exciting the bees, inducing untimely breeding and the wasting of mature bees, and the necessity of carrying the bees into the cellar in the fall and out of it in the spring. The first disadvantage is to be provided against by giving appropriate character to the protection to be provided, bringing the item under the head of protection, so there are but two main points to be kept in view in fixing the location and in the building of an underground receptacle for bees, proper protection and convenience of access. It will be found very profitable in the prevention of an endless amount of annoyance and anxiety to look well to these two particulars.

IMPORTANCE OF THE LOCATION OF AN
ENTRANCE TO A BEE CELLAR.

To provide the most satisfactory entrance, the cellar should be placed in a side hill having a slope more or less abrupt; the slope, of course, being upon the side where the entrance is desired, and, as an aid to the securing of perfect protection, it should be upon the north or east of the cellar; for it is easier to

guard against the cold of winter than against the heat of the sun in early spring. This disposition of the entrance provides also against the prevailing winds of winter. By thus taking advantage of a slope an entrance on a level can be made very easily by the removal of no great amount of earth, if the slope be at all marked. If no slope is to be had, a stairway may be made to serve by making it wide, strong and of an easy slope with no riser at the top to be stepped over.

As to the character of the soil to be preferred for a cellar, I should select a gravel, sandy or other porous soil, to secure the receptacle against dampness. This is not imperative, for, with good food, bees, I have no doubt, will winter as well in a damp place as in a dry one; but it is a comfort to have the combs and hives free from mold and moisture. If there be any danger of the accumulation of water in the cellar from any source, a drain should, of course, be provided for its removal.

THE PROPER SIZE FOR A CELLAR.

In deciding upon the dimensions of the cellar, it would be well to allow two square feet of floor surface for each colony it is to accommodate at any one time. Thus a cellar 20x20 ft. or 16x25 ft. could be made to accommodate 200 colonies. But it must not be overlooked that colonies are variable quantities. 200 colonies at the end of a favorable season might easily equal, in heat evolving capacity,

400 colonies at the end of a very unfavorable season. The 200 colonies in such a case would be likely to overheat a cellar of the size suggested in the absence of extra care.

THE WALLS, COVER TO THE CELLAR AND CELLAR DOOR.

The walls should be of solid, permanent material, at least seven feet in height and sunk in the earth almost their entire extent, allowing them to reach above the surface barely enough to accommodate a slight embankment sufficient to turn surface water. The superstructure, whether a honey house, shop or other structure, would greatly favor the cellar if it be made to extend beyond that, on the south and west sides. The cellar should be ceiled and covered over, between the joists, with four or five inches of dry saw dust, or some equivalent, provided before the floor of the superstructure is laid. I have made no provision for windows, and I do not consider

them any advantage. A double door to the entrance would do no harm, but it is not necessary in this latitude, if the entrance is on the side opposite the prevailing winds of winter and a hundred or more good colonies are to occupy the cellar of the size mentioned.

Of course, it must not be understood that a cellar for bees must necessarily be under a building; one well covered with earth, with a roof over all, would, perhaps, be better than one under a build-



JAMES U. HARRIS, Grand Junction, Colo.
President of the National Association
for 1904.

ing, and a tunnel driven into a side hill would make, I think, an ideal place for the safe wintering of bees.

THE INFLUENCE OF MOISTURE.

I have already alluded to the matter of dampness in a bee cellar. Perhaps in my statement I was somewhat too lenient to moisture. If one's colonies are all strong, and well supplied with sound stores, then my statement would hold good. Such a colony is like a thriving well-fed steer. He delights to encounter the rough

weather of winter, for his glowing internal heat quickly dispels rain and sleet from his healthy hide. But all colonies are not strong and well-fed. Those that are not strong may not have enough internal heat to dispel a large amount of moisture and when they fail in that they become wet and soon die. But when the stores are of poor quality the effect of moisture is, I imagine, still worse. Poor food is poor fuel, and the proper degree of heat is

not kept up without an excessive use of the fuel which is open to the reception of the excessive moisture to its own further injury; and the condition of the colony goes from bad to worse. But there is a partial remedy and this brings me to the question of temperature.

THE INFLUENCE OF TEMPERATURE.

From what I have just said it appears that in some cases bees may lack sufficient

heat to enable them to dispel superabundant moisture. The natural and ready prescription in such cases is, help them, or in other words, raise the temperature of the cellar. The temperature which I prefer in the cellar, *when everything goes well*, is from 42 degrees to 45 degrees F., but if the stores are sound these points are only a little more *desirable* than others above and below. I have wintered bees perfectly with the temperature almost invariably at 50 degrees, and I have a

neighbor who winters his bees just as well, perhaps, with the temperature ranging from 30 degrees to 40 degrees. With the condition specified, then the temperature may safely range from 30 degrees to 55 degrees.

IMPORTANCE OF SOUND STORES

That condition implies, of course, *sound stores*. But when the stores are bad the aspect of the matter changes. Then the bees should be helped by raising the temperature, and I



C. P. DADANT, Hamilton, Ill., Vice President of the National Association for 1904.

should raise it as high as 60 degrees if it is found that the bees can stand it without too many of them leaving their hives. But this is a little aside from the case where there is simply an excess of moisture. Without stopping to explain, I should say, keep the temperature of a moist cellar 5 degrees higher than the preferred degree in a dry one, and do not think to allow it to run down with im-

punity, as one might do in case of a dry one, unless the colonies are all strong and their stores sound.

TRoubles FROM BAD STORES HARD TO OVERCOME.

But, after all, I do not profess, as the manner of some is, to have solved the wintering problem. Given sound stores, and I can winter bees with certainty, but who cannot do the same? But how to winter safely bees, supplied with stores such as we used to get occasionally twenty years ago, is an unsolved problem to me, and, so far as I know to everybody else. We have not learned how to prevent the disease caused by the consumption of bad stores in confinement. We perhaps know better how to alleviate it, that is all.

But before dismissing the subject of temperature, I ought to say that in the case of such a cellar as I have described, there should be no trouble in controlling the degree of heat by opening the door more or less on cool nights as the occasion seems to require. It can hardly fail to be warm enough if reasonably stocked with bees.

VENTILATION OF LESS IMPORTANCE THAN FOOD.

Another matter I have not yet learned much about is ventilation. With me,

bees have wintered both well and ill with unlimited ventilation, and they have done the same with the cellar as close as I could keep it. I reason that, with pure, well-ripened honey, or sugar syrup, for food, with the bees in the quiescent state that they should assume in winter, the office of breathing is very limited, and that even in the closest cellar the bees are sure of enough air. When their food is bad, it seems likely that more air is required to assist in eliminating impurities,



GEO. W. BRODBECK, Los Angeles, California. Secretary of the National Association for 1904.

and it is quite possible that in a tight cellar they might not get all that would be beneficial and at all events under such circumstances I should aim to provide some degree of ventilation. I do not think bees ever smother in a cellar, if in hives that are well ventilated, but they are said to do so in close hives, though per-

haps they worry themselves to death rather than smother. The effect is the same, and in putting colonies into the cellar the hives should be given ample ventilation in such a way that it cannot be choked by dead bees. I know of no simpler or more effectual way to do this than to remove each bottom board entirely, leaving the whole bottom of the hive open. My hives have covers with a $\frac{5}{8}$ inch cleat across each end on the upper

side, which furnish resting places for each successive hive as I pile them up in the cellar for winter. Loose strips answer as well, but are not so convenient. The hives without the bottoms are easier to handle and take up much less space in the cellar.

DISTURBANCE IN WINTER NOT LIKELY TO CAUSE TROUBLE.

When first trying cellar wintering, one will be concerned lest he do injury by disturbing the bees during their confinement, but I judge there need be but little fear. Whether it does any injury at all is altogether problematical. Years ago, out of curiosity, I used to visit the cellar frequently with a light, and often opened and examined the colonies most convenient. They wintered as well as the others. Such disturbance probably does the bees no good, but in case of necessity I should disturb them without compunctions. Some view any disturbance with horror, and if they were to bring in bees from an out-apiary to be wintered inside, they would use every effort to do it soon enough so they might have a flight before being put into the cellar, their theory being that any disturbance causes the bees to begin at once an extra consumption of honey, and that at once their intestines begin to be overloaded with excrementitious matter and so pave the way to danger. No doubt a disturbance continued for many days would tend to that effect, but a temporary disturbance only causes them to load up their honey sacks in preparation for an anticipated emergency, but when renewed quiet dispels apprehension the honey is unloaded into the cells and no harm is done.

CARRYING THE BEES INTO THE CELLAR.

When to put the bees into the cellar, and how to arrange them there, are questions that are of interest to many. When ready to begin putting the bees in, I provide the bodies of as many eight-frame hives, or other boxes or things equivalent, as there are to be piles of colonies when all are in. These boxes are to be used to support the piles, raising the lowest col-

ony ten or twelve inches from the level of the cellar floor. I plan to arrange the bees so that when all are in they shall stand in rows, or in double rows, with alleys between, the side of each hive toward an alley, in order that, in the winter, by passing along the alley and glancing under any given colony, I may be able to determine its condition. The debris and the number of dead bees generally furnish sufficient grounds for a safe diagnosis. When ready to bring in the bees I place empty hives or other supports one at the further end of each of several proposed rows, taking care that it is level and firmly placed. It is desirable that each be about the right size in order to save room, for one support must not be used for two, or parts of two, piles. Each pile must be entirely dependent of every other. This is important; for, if a row be in any way woven together, even though slightly, the placing of a hive, or the removal of a hive, disturbs the bees in the whole row; and this would be found to greatly aggravate the difficulty of getting the bees either in or out of the cellar. One can scarcely go wrong in selecting the time for carrying the bees in, so long as he does not wait till winter actually sets in. When ready and a good day comes, do not wait to give them the chance for another flight. The time to sow oats is when you are ready. Any suitable time in November is good, but generally toward the latter end, though earlier may be better, especially if the weather gets cold enough. I used to select a dull cloudy day with no wind and the temperature at about 45 degrees; I now select a day of the same character, except the temperature, which I like to be from 10 degrees to 20 degrees colder. When the right day comes, act promptly. Select a heavy colony, insert the screw driver, very carefully, into the entrance, and gently loosen the hive from the bottom, lean over it from the back end and raise or tip it till the fingers of one hand, and then of the other, grasp the bottom edge of the hive, then draw it up till the

cover is pressed firmly against the breast, and go with it at once to its place on one of the supports, and let it project over that backward or forward enough to insure ventilation. With care, courage and promptness, the colonies will generally be in place before the bees realize that anything is happening, but there must be no jarring or scratching of the hive, no dodging or delay. He who hesitates is lost. If the bottom boards stick, they should be loosened a day or two before hand. If the colonies are very strong, some colonies will be found with the cluster resting on the bottom board. In such cases the front of the hive must be blocked up an inch or two for a time till the cluster contracts. If the method described be found to be too heavy work, two careful persons can use a light, cushioned jack, carrying two hives at a time. It is not necessary to carry them all in one day, nor even in one week. Work while it goes well and when it goes ill stop awhile.

ARRANGEMENT OF COLONIES IN THE CELLAR.

Going back to the cellar, notice several supports have been put in place. This is to enable one to chose for the colonies he brings in, a pile best suited for its reception. The strongest colonies will best endure the lowest place, and the chances of the weakest will be improved by a place at the top—a fortunate requirement if the lifting be considered. When there are no bees in the cellar it should generally be kept open to allow moisture to escape, and prevent mold, but especially for the two or three weeks previous to the putting in of the bees, that it may become as cool as the outside weather will make it; and it is better to keep it open during the entire time of taking in, and afterwards, until the bees are well settled, as during the excitement of changed conditions they are apt to become too warm. With a small number of colonies there would be no danger. Of course if the weather should turn warm, the cellar would have to be closed.

The closing and most interesting scene of the wintering campaign is emptying the cellar of the bees. I think I was the first to advocate the doing of this early, in contravention of the doctrine that the bees should be kept in till soft maples and willows are in blossom, and then taken out only on a warm day, so that they could immediately enjoy a good flight. Now, many are thinking with me. About the time the sun crosses the equator, the 20th of March, look out for an auspicious day for moving them out. In the meantime carry in the bottom boards, overhaul the bees and set them on the bottoms with an entrance block to each convenient for quick closing and stack them in piles suitable for easy handling. The clusters of some colonies will yet be found resting on the cover of the hive beneath. In such cases, put the hive on a bottom, remove its cover, then take the cover from the hive beneath, and brush the bees from its upper side into their own hive, or, if there be no bees on its under side lean the latter cover on the bottom board against the front of the hive when the bees will run in at the entrance. During all this the cellar should be kept as cool as it can be made, and at nights, while the bees are being carried out, the cellar should be wide open. Now, *at a time when it is too cold for the bees to think of flying*, take them out, many or few at a time, putting each on any convenient stand without any reference to its last year's place, giving it an entrance an inch or two wide. It should require no argument to show that bees successfully wintered in the cellar are better able to bear the rough weather of early spring than bees that have suffered all the rigors of the entire winter out of doors. Yet many claim superior advantages for out-door wintering. Early removal from the cellar gives the bees largely the advantage of both methods. But this is for bees *successfully* wintered. If the bees are badly diseased, they should be kept housed till settled warm weather.

Lapeer, Mich., Sept. 26, 1903.

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

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Flint, Michigan, Sept. 10, 1903

THE AMERICAN BEE JOURNAL has the sincere thanks of the Review for the use of the cuts showing the officers of the National Association for 1904.

THE REVIEW has never been too free from typographical errors, but I believe none has ever been bad enough to destroy the sense until last month, and that occurred in the little motto at the head of Arthur C. Miller's article. It ought to have read:

"Errors like straws upon the surface flow,
He who would search for pearls must dive below."

The compositor made the word "pearls" read "parts" and the proof reader (W. Z.) let it slip through. I could give a good excuse—but what's the use?

THE ISOLATION OF CALIFORNIA APIARIES

In speaking of the question of whether a bee-keeper should pull up stakes and seek a better location, if the one he possesses is a poor one, the American Bee Journal says: "Climate, home, surroundings, are all of importance. Some of the Northern bee-keepers in attendance at the National convention at Los Angeles,

who had cast longing looks toward that golden land, went home entirely satisfied to remain where they were, after seeing some of the California apiaries. Of course, all locations in California are not the same, but some of them are dreary enough. To get the advantage of pasturage an apiary is located in some canyon, away from the haunts of men, the nearest neighbor half a mile or so away, outside of the sound of bell of church or school. With many it is a life of exile during the honey season, the rest of the year being passed elsewhere, but all would not like a life of that sort."

Yes, Mr. Bee Journal man, and the work is hard, too, if we may judge from a large printed placard that I saw posted up in one apiary that I visited, presumably for the benefit of hired help; it read as follows: "Work on a bee ranch is no summer picnic."

CALIFORNIA is so different from the East that it is not to be wondered at that some of the Eastern visitors should come home pretty well satisfied with their homes in the East. A man who had always lived in California would probably go home from a visit to Michigan with feelings that California was a pretty good place to live. Those who have lived there for years are enthusiastic in its praise, and it is a grand good thing to be satisfied and feel at home in the State where you live. So much by way of an introduction, and now let me quote a little from a private letter just received from an old man who was one of our "earlold" party, Mr. J. J. Shearer, of Plymouth, Michigan, who went West, partly, to visit "the hole in the ground" (mine) where he worked 51 years ago. Among other things, Mr. Shearer says: "I left the last of our car-companions at 'Frisco, and made my way home by daylight, the better to see the country. At the mines, at Nevada City, where I worked 51 years ago, I found pine trees two and one-half feet through growing on the ground that we worked over. It seems

as though fully three-fourths of the people had been born since I was there, and the country is overstocked with money—and home-seekers. If I were a young man now, I don't know what I would do anywhere in the West to make a new dollar larger than an old one without a good deal of hard work. I am glad I went, but gladder to get home, and I think more of Michigan than I ever did."

CALIFORNIA AS A BEE-KEEPING STATE.

California is certainly a land of sunshine and flowers and stately palms. The latter are often planted in rows along the roadside and between fields of orange or lemon trees, the same as we plant maples here in Michigan. The palms sometimes reach the height of 25 or 30 feet, and I saw a few that must have been nearly 50 feet high. I suppose that they could be grown to the same height here in Michigan if it were not for Jack Frost. Palms are a tropical plant and must have a tropical climate, which California truly has, as it produces in profusion such fruits as dates, figs, olives, lemons and oranges.

CALIFORNIA LIKE ANOTHER WORLD.

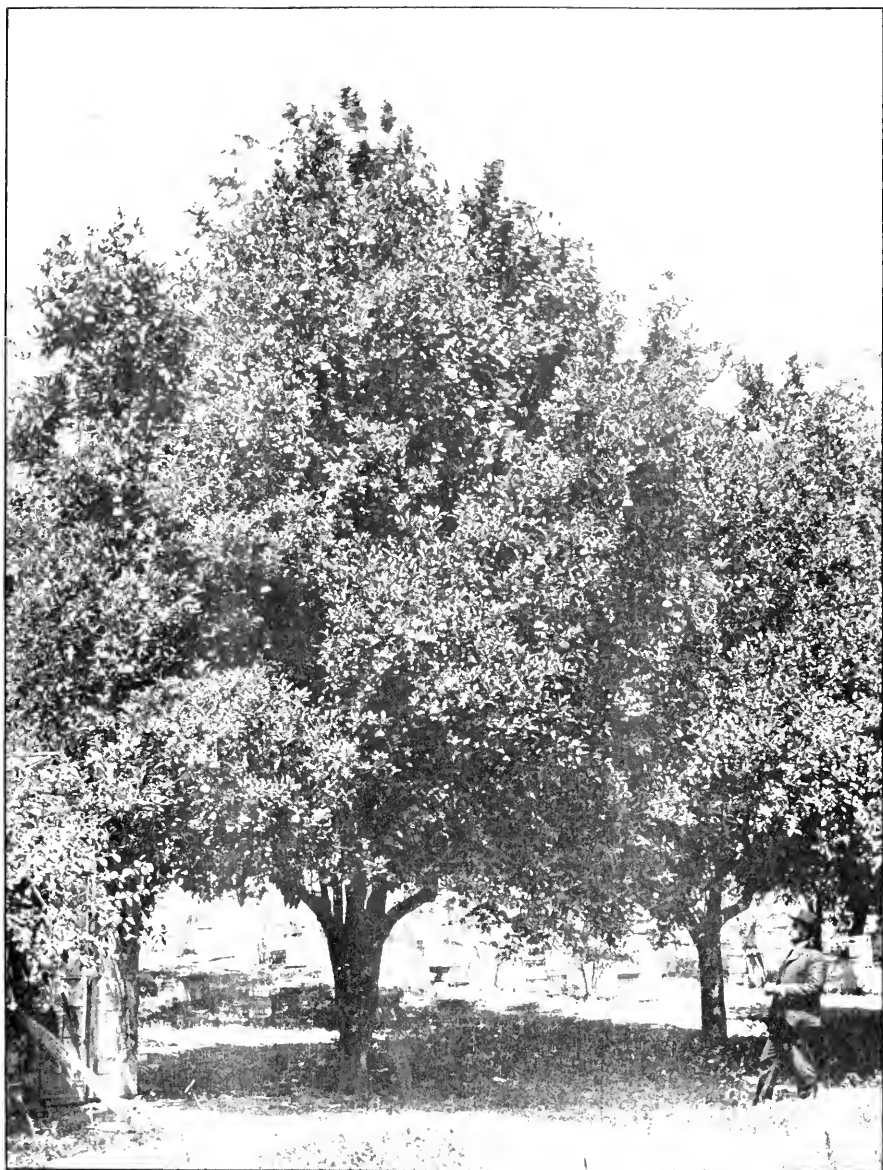
To a man from the East, a trip to California seems almost like a visit to another world—at least to a different country than his own. Mr. McIntyre went from Canada to California, and when he first went there he said it seemed to him that "the moon was the only thing that looked natural." I saw only one tree that we have here in the East, and that was the sycamore. In the region of Los Angeles, the tree most extensively grown for timber is the eucalyptus. One peculiarity of this tree is that cutting it down does not kill it. It sends up sprouts something as the basswood does here in the East. These sprouts are thinned out to two or three to each stump, and in a few years, another crop of timber may be cut. The eucalyptus furnishes some honey early in the season, but it is dark.

Another product of California worth mentioning is that of kerosene oil, but

the oil is not exactly like that found in the Pennsylvania region. The Pennsylvania oil has a paraffine base, while that of California has a base of asphaltum. Not much of the California oil is refined for illuminating purposes. It is used largely for fuel, particularly under steam boilers. The locomotive that drew our train the last few hundred miles was fired with crude oil. (The fireman has a "snap.") I noticed he wore patent leather shoes.) The oil, as it comes from the earth, is very thick, almost like tar, and has to be warmed before it can be used in sprinkling the roads, both the railroads and the wagon roads, to prevent the dust from flying. A wagon road that would be ankle deep with dust is transformed by oil into a smooth, hard, dustless track. Some of the suburbs of Los Angeles are a perfect wilderness of oil well derricks.

CALIFORNIA'S DELIGHTFUL CLIMATE.

The climate of California is delightful in some ways, while in others it is not. What corresponds to our winter is their rainy season, that is, if it does rain. Sometimes it does not, and then there is a failure—at least of a honey crop. I can imagine that the winter season, at least when it was not raining, would be delightful. I was told that after the winter or rainy season was over, and the mountains were putting on their robes of green, while the thousands of blossoms were pouring out their perfume, regaling both the sight and the smell, that the feeling was one of exhilaration almost to the point of intoxication. At the time of our visit, vegetation on the mountains was dried and brown, and it seemed as though rain, if any should fall, would rush down the mountain side, and in a few days the soil would be as dry as ever, but I am told that the soil is of a very porous nature, something like a bed of ashes, and that it absorbs a large portion of the rain that falls upon it. After the rainy season is over, then follow months with no rain and almost no clouds. Mr. Jacob Alpaugh, of Ontario, went out to



ORANGE TREE NEAR McINTYRE APIARY.

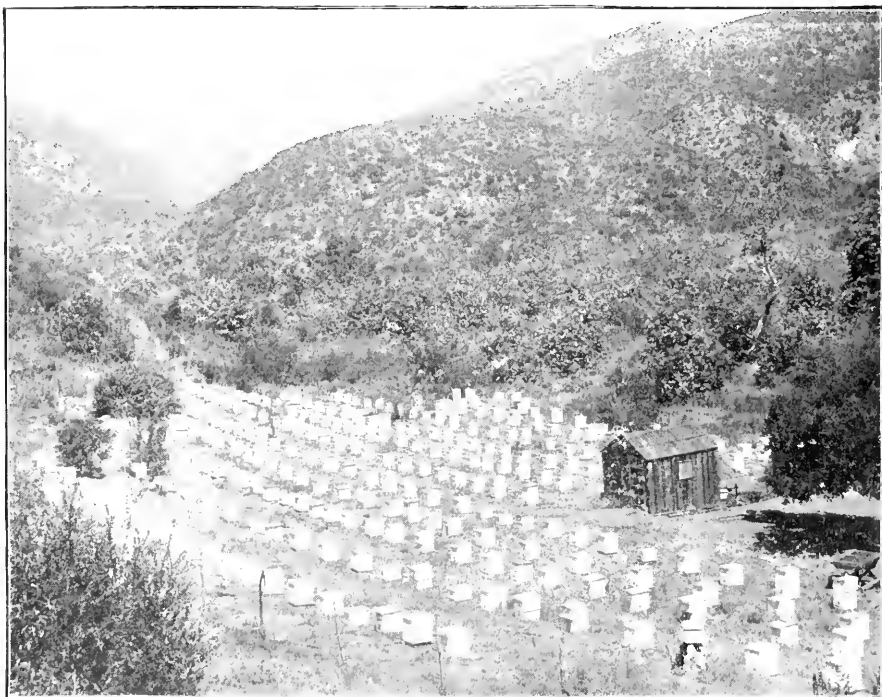
This was the largest orange tree I saw in California. Something of its size may be understood by comparing it with its owner who stands admiring its dark green foliage and luscious golden fruit. Standing there in the bright sunshine it made a beautiful picture.

California, stayed a year, and then went back to Canada again. He said that this eternal sunshine, day after day, day after day, for months at a time, was too monotonous for him. He wanted an occasional cloudy day and a thunder storm. During the week that I was in the State there were very few hours in which I was not uncomfortably warm, but it is only fair to say that the weather was unusually hot while I was there—so hot that Mr. Mendelson had a few colonies of bees

stand at 70 degrees. Some bee-keepers are very delightfully situated in having their homes located in some seashore town, while their apiaries are located on the line of some railroad extending inland—the railroad running along some valley and the apiaries in the canyons of the mountains that skirt the valley.

APIARIES MUST BE LOCATED IN THE MOUNTAINS.

Very few bee-keepers live where their apiaries are located. Most of them live



OCT-APIARY BELONGING TO GEO. W. BRODBECK, Los Angeles.

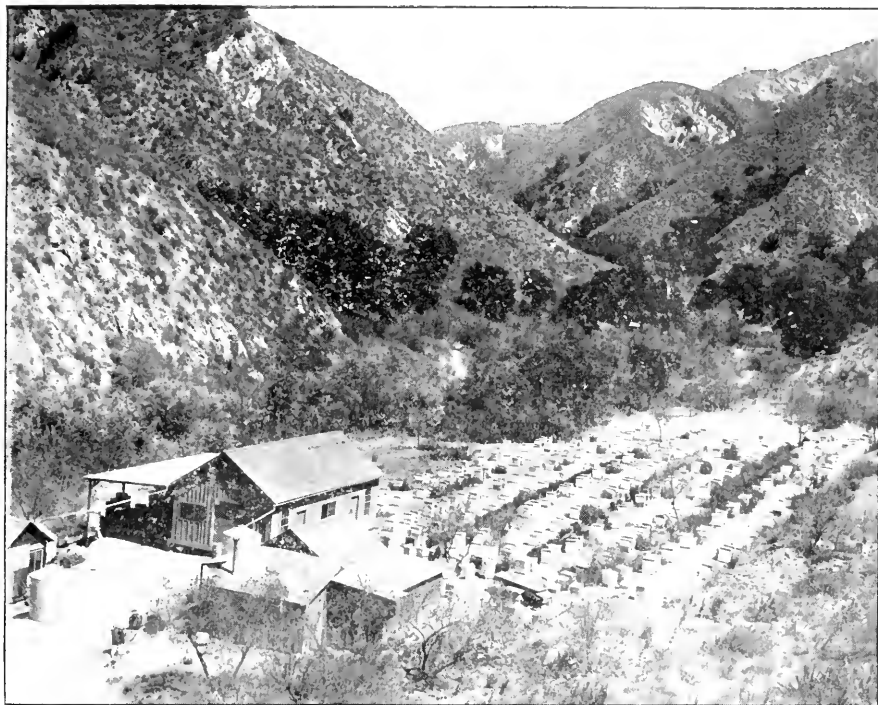
At the right, not shown in picture, is a big pile of extracted honey in 60-lb. cans, also the cabin that is the home of the helpers during the busy season.

melt down, or their combs melt down, which is something unusual. There is also a great difference in temperature between the seashore, and even a few miles up among the foothills and the mountains. Up in the mountains the mercury may stand at 100 degrees, while only thirty miles away, at the seashore, it will

in some town, while the apiaries are, from necessity, located in the mountains. The reason is this: The great honey producing plant of California, corresponding to the white clover of the East, the black sage, flourishes only at a certain altitude. By the way, the sage is a very ordinary looking shrub, perhaps three or four feet

in height, while the blossom is far from being showy. Like some other things of importance, its appearance is not so striking as others of less importance. It does not grow in the valleys, nor upon the tops of high mountains. Its home is at a certain altitude upon the mountain slopes, and it is here that the bees must be located. Mountains are not one long,

boring them nearer, he expected that he would be compelled to move his apiary farther up the canyon, so he set to work building a road to enable him to move his apiary should he find it necessary. He spent \$100 in road-making before he learned that the oil company would come no further up the canyon, as the last bored wells had not proved profitable.



MR. MENDELSON'S BEST APIARY.

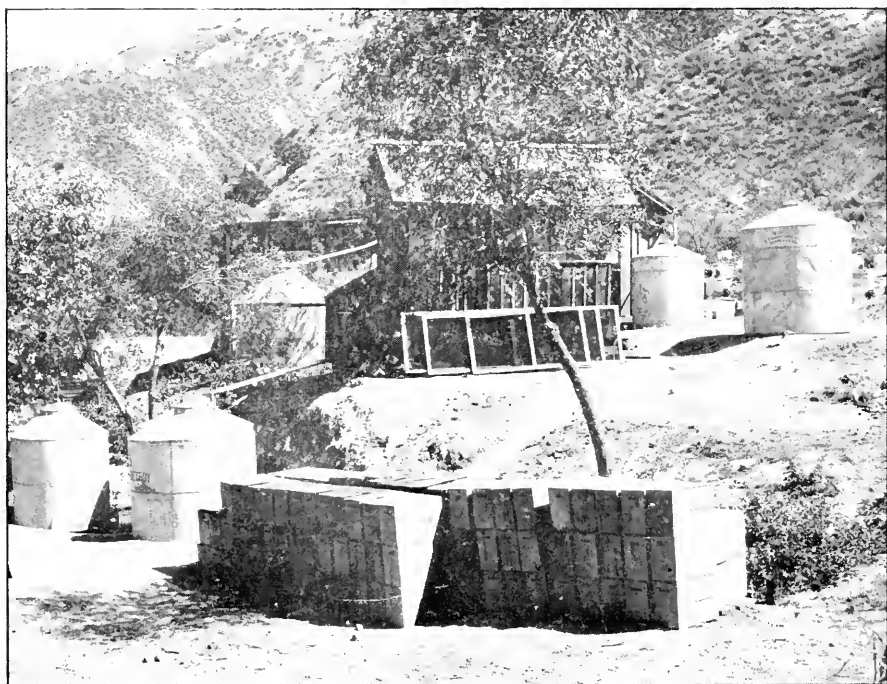
Upon this apiary Mr. Mendelson has bestowed a great deal of care and labor. It is laid off in terraces, two rows of hives upon each terrace. In wheeling earth to build these terraces, Mr. Mendelson at one time nearly wore himself out

solid ridge, but are composed of long rows of hills, or peaks, with valleys or canyons between, and it is up in these canyons that the apiaries must be located. Sometimes the making of a road is not a very difficult matter, and again, it is an expensive and arduous undertaking. Where Mr. Mendelson has his main apiary located there are oil wells below him in the canyon, and, as they kept

Mr. Mendelson told me of instances where the making of a wagon road was so difficult that it was not attempted, and bees had been packed up the canyon on the back of a burro—one hive on each side of the donkey—and the honey packed down the same way. In order to get a cook stove up the canyon it was necessary to take it to pieces and pack it up on the burro.

Of course, no very pretentious buildings are built at these mountain apiaries. A cabin, or "shack," large enough for a bed, table, stove, chair or two, and a few provisions and cooking utensils, constitutes the home, and then there is a little house for extracting. There is no great necessity for a store room for the honey. It runs directly from the extractor into a great galvanized iron tank perhaps six

rels for storage and shipping. The cost of tins for storage and shipping is something enormous. These cases of honey can be stacked up out of doors, as it does not rain, and protected from the sun by being covered with boards. There is not much danger of loss by thieves. No one is going to travel several miles, in the night, up into a mountain canyon, to steal what honey he can eat, or even



EXTRACTING HOUSE OF M. H. MENDELSON.

Notice the pipe that conveys the honey from the extracting house to the storage tanks. As one tank becomes full, the pipe can be changed to another. In the foreground is a pile of extracted honey ready for market.

feet high and six feet wide. When one tank is filled, the pipe is changed to another and the work goes merrily on. After the honey has stood a few days, until it is thoroughly settled, the scum is taken off the top, and the honey drawn off into the 60-pound jacketed tins. Most of them use two tins in a case. By the way, several bee-keepers are this year trying the experiment of using a few bar-

rels for storage and shipping. Probably not one person in a thousand knows that there is any honey or any apiary there.

A VISIT TO RAMBLER'S OLD APIARY.

When I was in California I visited the apiary that the late lamented Rambler owned near Los Angeles. It is now owned and managed by the Schaffner Bros., who live in Los Angeles. While there it almost seemed as though I was treading on



Rambler's Old Apiary Near Los Angeles. Now Owned By Schaffner Bros.

The point of view was selected, and then the time of exposure was waited for until the sun was at exactly the right point to give a beautiful effect by just kissing the tips of the sage brush upon the opposite mountain side.

sacred soil. I was shown several of his personal belongings—his old red lantern by which he developed his negatives, his "jouncer," and his automatic strainer by which he could easily and quickly bring into use a fresh surface of cloth when the portion in use had become filled with stickiness.

There is a certain sort of romance about working with bees away up in a mountain canyon, but I can imagine that after a few days of hard work, in the hot sun, with cross bees, and only warm cistern water to drink, that much of the picnic feature would wear off. It would be almost impossible to get a well of good water up on the mountains, (there is one at the Rambler apiary, made by digging and blasting a tunnel back into the mountain about 75 feet. We walked into it and carried a lantern when we went after a pail of water) and rain water is caught in the big galvanized iron tanks. You can imagine how warm it gets in the sun. There is, however, a sort of companionship about the mountains that I think would require quite a lot of hardships to make me entirely forget it. I stayed one night with Mr. Mendelson at his apiary in the canyon, and, as we sat out in front of his cabin in the evening, and saw the hills grow purple with twilight, and the stars come glimmering out, there came over me a feeling as though the surrounding mountains were protecting friends.

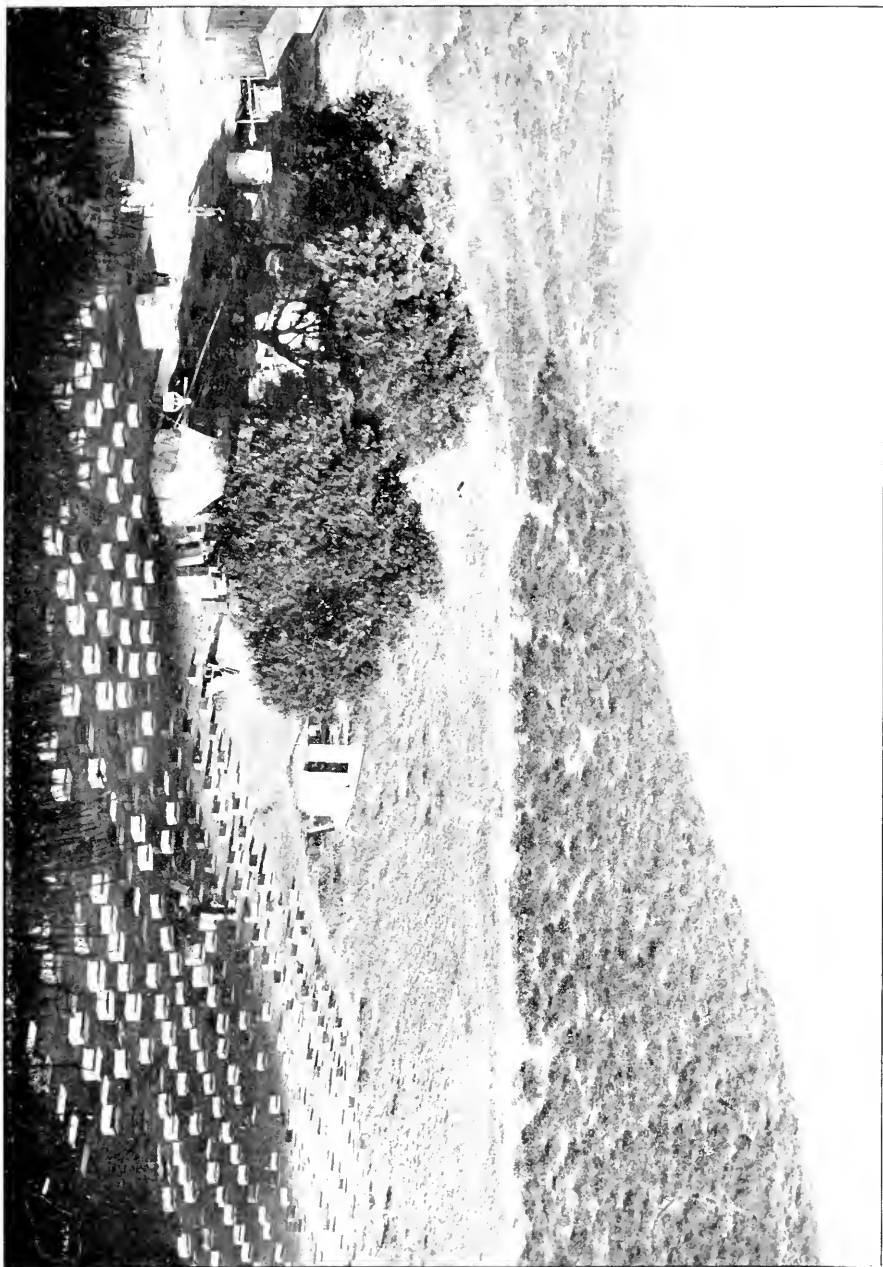
GOOD LOCATIONS IN CALIFORNIA NEARLY ALL OCCUPIED.

Let no one think that he can go to California and pick up a good honey location anywhere. The orange blossoms sometimes furnish quite a quantity of honey, and there are some portions of the state where alfalfa is grown under irrigation, and there are some districts where lima beans are grown in the valleys and furnish quite good crops of honey, but the great crops of California honey are from the black sage, and this does not flourish all over the state, as I have already explained. Southern California, of which

Los Angeles is the metropolis, if not the geographical center, is the great honey producing district of California, and nearly all of the desirable locations are already occupied. Occasionally there is a canyon without an apiary, but there is usually some good reason why it is unoccupied. If a man wishes to locate in California as a bee-keeper, the most feasible plan is for him to buy out some one already located. It would be a long, tedious, precarious task for a man to start with a few colonies and build up into a prosperous business. Sometimes there are two, three, or even four years (although the latter is very unusual) of drouth in which the bees do well if they get a living. The only hope is in having several apiaries, and then when there comes a good year the owner can reap a harvest of 50,000 pounds, or 75,000, or even 100,000 pounds, as has been done, and all of these thousands of pounds will keep the owner over until another good year. Then, again, men who have the capital and foresight, keep their honey until a dry year, when prices go up, and thus make the poor year help them in the way of selling to advantage.

CALIFORNIA'S ONE GREAT DRAWBACK— DRY YEARS.

The dry years are the one drawback to California bee-keeping. There come years in which thousands of colonies of bees starve to death. I was told of one year in which ten car loads of empty combs were gathered up by an enterprising firm and made into wax. The problem in such years is to keep the bees alive without feeding. There is one advantage, and that is that the bee-keeper knows in the spring if there is going to be no harvest and he can prepare for it. The remedy is to take away several combs of honey from each colony, in the spring, contracting the brood-nest. This will curtail the production of brood, and save the consumption of honey that would have been used in rearing brood if it had been left in the hives. After the swarming season and the desire for brood-rear-



ing has passed, then the combs of honey may be returned, and the bees will use it simply for their daily food, instead of wasting it in useless brood rearing.

MOVING TO THE BEAN FIELDS.

After the harvest from sage is over, some bee-keepers, notably Mr. Mendelson, move some of their bees to the bean fields. Just a few words of description about the beans. They are the lima

every way possible until there are several inches on top that are reduced to absolutely dry dust. The beans are then planted just below this dust, next to the damp earth underneath. As soon as the beans are up, and as long as possible afterwards, this dust is kept stirred, thus acting as a mulch and keeping the moisture below. It must be remembered that the crop must be grown without any rain,



VIEW ON A BEAN RANCH IN CALIFORNIA.

This picture was taken on a farm containing 1,900 acres, all planted to beans. The buildings shown are where some of the teams are cared for. A few rods beyond the barn rolls the Pacific Ocean.

beans, just such as we grow here in the East in our gardens, and furnish poles for them to climb, but no poles are needed in California, as there is no rain, and the vines can lie on the ground without the beans rotting. Great pains is taken in preparing the soil. As soon as it is fit for cultivation, after the rainy season is over, it is plowed, and harrowed, and rolled, and pulverized, and worked in

and the moisture in the ground must be preserved. In one district, where Mr. Mendelson lives, there are 90,000 acres devoted to the raising of beans—mostly limas. The honey from beans is light colored, and of fine flavor, and when I expressed to Mr. McIntyre my wonder that more apiaries were not moved to the bean fields, he said that most of the bee-keepers, after harvesting 75,000 or 100,000

pounds of sage honey, were tired enough to take a rest and be contented without prolonging the harvest. Mr. Mendelson has two wagons specially rigged for moving bees to the bean fields. One has a rack eight feet wide, four or five feet high and twenty feet long. This rack is made very strong, being bolted together, between 300 and 400 bolts being used in its construction. In this rack 200 single-story colonies can be hauled at one time.

lowed buyers to prey upon the producers. Fine sage honey has been sold as low as three cents a pound. The prospects now are that this marketing problem has been solved. A strong commercial organization has been formed, with Los Angeles as its headquarters. Good and experienced men are at its head and they are able to practically control the output of that locality. It is one of those cases where the producers are few in numbers,



A TYPICAL CALIFORNIA RESIDENCE.

I saw many, more stately mansions than this, surrounded by spacious grounds, and some homes more humble, but surrounding all were the graceful palms and clambering roses.

Six horses are used. The other rack is the same, only a few feet shorter. The bees are moved at night.

CALIFORNIA'S SUCCESSFUL, COMMERCIAL ORGANIZATION OF BEE-KEEPERS.

While enormous crops of honey have been harvested in California, the distance from Eastern markets and the unorganized condition of the producers, have al-

lowed buyers to prey upon the producers. but extensively engaged in the business, and not widely scattered. It is one of those instances in which, as was pointed out last month by Mr. Taylor, the existing conditions are such that an organization is really needed. This Association receives and publishes (to the members, at least, and possibly to others, but I don't know) monthly crop reports. It

establishes prices monthly and maintains them. Never before, in the history of California bee-keeping, have prices ruled so high at the end of the honey season as they ruled at the end of the one just passed. White extracted honey sold at wholesale for 5½ cts. This Association advances money on honey—more than half its value. In short, it is doing all of those things of which we have talked and hoped.

A TRUE PICTURE MUST HAVE BOTH
LIGHTS AND SHADOWS.

In the above I have tried to give a fair and impartial account of California bee-keeping, as I saw it during a stay of one week. I have tried not to exaggerate, not to paint in too bright colors, nor to neglect the shadows necessary for a true picture. There are many details that a longer stay would probably have allowed me to have added, such, for example, as the fact that, near the ocean, the fog has an influence upon vegetation, but is not desirable from the bee-keepers' standpoint. It retards the coming of the honey season and delays the work of the bees in the early part of the day. An apiary near the coast has sometimes furnished only a small crop, while one a few miles further inland has furnished a bountiful crop. As in other parts of the country, a man ought to spend several months in investigating before investing any money and settling down permanently. There is no doubt that California is a great honey country, at least, when the conditions are right. In a good year I suppose that California produces more honey than any other State. I have seen it reported that California has shipped as many as 500 car loads of honey in a year. This year it is estimated that she will ship about 125 car loads. It is very certain that, if the business is managed rightly, money can be made there keeping bees, but Mr. W. L. Coggs shall once told me that he had equalized the yields for several years in both California and New York, and there was not very much difference. But California has one distinct factor in her favor; those

everlasting mountains will stand there a good many years, and so long as they stand the black sage will flourish on their almost inaccessible slopes. When there is rain a bee-keeper can be almost certain of a crop. When there is no rain he knows what he must do to keep his bees alive. He must have enough bees so that he can make money, even if there are occasionally poor years. The last needed factor, organization, has now been added. The pathway to success is pretty clearly marked out.

EXTRACTED

SHIPPING COMB HONEY.

How It Should Be Packed To Avoid Loss From Breakage.

One of the most vexatious losses that can come to a bee-keeper is to have a fine shipment of comb honey broken up in shipment. I have had quite a little experience as a shipper, with no losses in this direction, and my advice would agree exactly with that given by Bro. York in a recent issue of the American Bee Journal, and he has had abundant opportunity for observing the other end of the proposition—the condition in which the honey reaches its destination. Bro. York says:

Only the very best and second best would we place on the distant market. We would put it into the ordinary 12, 20 or 24 pound no-drip shipping cases, placing next to the glass a row of sections containing what would be a fair sample of the rest of the case. There should be no "facing" for deception.

Then, six or eight of these cases of honey should be put into a crate or box, but first putting in the bottom of the crate or box a layer of straw or hay several inches deep. This will serve as a cushion and help to prevent the breaking down of the combs in handling when shipping.

After putting in the cases of honey, nail strips of boards across the top of the box or crate and mark thereon very plainly, "This Side Up. Comb Honey. Handle With Care."

Along each side of either box or crate, even with the top edge, should be nailed a board, say one inch thick, three or four inches wide and about a foot longer than the length of box or crate, to serve as handles by which two men (one at either end) can carry it.

We would have each crate or box contain about 200 pounds of honey. Of course 100 pounds each would do, but we think that the larger amount would be handled more safely, as it would be too heavy to tumble around or to be easily overturned.

We have prepared comb honey for shipping as above described, and none was found broken after going hundreds of miles.

We once received a shipment of about 2,000 pounds, sent to us from Minnesota in the ordinary 24 pound shipping-cases, each one being handled separately. The result was that at least a third of the honey was entirely broken out of the sections. And such a mess to clean up! Well, we don't want another like it for love or money. It was also a great loss to the shipper.

With proper care in preparation, comb honey can be shipped safely almost any distance.

When on my way to Los Angeles, I, in company with Messrs. France and Niver, called upon Mr. Burnett for a few minutes, and he was quite emphatic in his statement that the manufactures did not make the cleats thick enough in the no-drip shipping cases. As now made, if several sections leak very much the honey is deep enough to reach the bottoms of the sections, and the very object of the no-drip is defeated. He says the strips ought to be at least one-fourth of an inch thick, and three-eighths would be better. Another thing: The strips of wood should be thoroughly fastened in place. If they slip around out of place, it is worse than though no cleats had been used.

CONSTITUTIONAL AMENDMENTS.

Some That Are to Be Voted Upon at the Next Annual Election of the Association.

Last July some of the members of the Board of Directors, by means of corres-

pondence, settled upon a set of amendments that they believed ought to be made in the constitution of the National Association. These amendments were then laid before the whole body of Directors and before the Executive Committee, and were approved by a majority of each body. Then the amendments were published in the bee journals and criticisms asked for. At Los Angeles a committee of five was appointed on amendments, and these amendments and the criticisms were laid before them. Members of the convention were specially invited to go before the committee and make any suggestions or criticisms that they desired, some of whom availed themselves of this privilege. A few minor changes were made in the amendments as proposed by the men who originally drafted them, and they were then read to the convention, and turned over to the Secretary for him to pass on to the General Manager, who will send them out next December for the members to vote upon. The amendments as they now read, and as they will be voted upon, are as follows:—

ARTICLE III.—MEMBERSHIP.

SEC. 1.—To be amended to read as follows:

SEC. 1.—Any person who is interested in bee-keeping and in accord with the purpose and aim of this Association, may become a member by the payment of one dollar annually to the General Manager or Secretary; and said membership shall expire at the end of one year from the time of said payment, except as provided in Sec. 10 of Article V of this Constitution. Any person may become an Honorary Member by a two-thirds vote of all the members present at any annual meeting of this Association. No member who is in arrears for dues, as shown by the books of the General Manager, shall be eligible to any office in this Association; if such disqualification occur during the term of any officer, the office shall at once become vacant.

SEC. 2.—To be amended to read as follows:

SEC. 2.—Whenever a local beekeepers' association shall decide to unite with this

Association as a body, it will be received upon payment by the local secretary of fifty cents per member per annum to the General Manager.

ARTICLE IV.—OFFICERS.

SEC. 1.—To be amended to read as follows:

SEC. 1.—The officers of this Association shall be a General Manager, a President, a Vice-President, and a Secretary, whose term of office shall be for one year; and a Board of twelve Directors, whose term of office shall be four years, or until their successors shall be elected.

SEC. 3.—To be amended to read as follows:

SEC. 3.—The President, Vice-President, Secretary, and General Manager shall be elected by ballot during the month of November of each year, by a plurality vote of the members, and assume the duties of their respective offices on the first of January succeeding their election.

SEC. 4.—To be amended to read as follows:

SEC. 4.—The President, Vice-President, Secretary and General Manager shall constitute the Executive Committee.

SEC. 5.—To be amended to read as follows:

SEC. 5.—The Directors to succeed the three whose term of office expire each year shall be elected by ballot during the month of November of each year, by a plurality vote of the members. The three candidates receiving the greatest number of votes shall be elected, and assume the duties of their office on the first of January succeeding their election. The Board of Directors shall prescribe how all votes of the members shall be taken, and said Board may also prescribe equitable rules and regulations governing nominations for the several offices.

ARTICLE V.—DUTIES OF SECRETARY.

SEC. 3.—To be amended to read as follows:

SEC. 3.—It shall be the duty of the Secretary to keep a record of the proceedings of the annual meetings; to receive membership fees; give a receipt for the same, and turn all moneys received over to the Treasurer of the Association with names and postoffice addresses of those who become members; to make an annual report of all moneys received and paid over by him, which report shall be published with the annual report of the General Manager; and to perform such other duties as may be required of him by the Association; and he shall receive

such sums for his services as may be granted by the Board of Directors.

ARTICLE VII.—VACANCIES.

Amended by adding the following clause to the end thereof:

Any resignation of a member of the Board of Directors shall be tendered to the Executive Committee. Any resignation of a member of the Executive Committee shall be tendered to the Board of Directors.

ARTICLE IX.—AMENDMENTS.

To be amended to read as follows:

This Constitution may be amended by a majority vote of all the members voting, providing such proposed amendments have been approved by a majority vote of the members present at the last annual meeting of the Association, and copies of the proposed amendment printed or written shall have been mailed to each member by the General Manager at least 45 days before the annual election.

JAMES U. HARRIS,
GEO. W. BRODBECK,
C. P. DADANT,
W. F. MARKS,
UDO TOEPFERWEIN,
Committee.

Perhaps a few words in explanation of the reason for some of these proposed amendments may not be out of the way. Article III, Sec. 1, as amended, settles distinctly the question as to whether an office shall become vacant if the officer allows his dues to lapse. Sec. 2 of the same article, as amended, allows any local association to join in a body by the local Secretary paying 50 cts. per member per annum, regardless of what the membership fee of the local association may be. The constitution, as it now reads, says that the local dues must be \$1.00. This is a matter that the local association should be allowed to manage as it sees fit.

Article IV, Sec. 1, is no change in meaning from the old section, but the wording is changed to avoid any chance for ambiguity. The old wording might be construed to mean that the General Manager, President, Vice President and Secretary should hold office for four years, the same as the Directors hold their office.

Perhaps the most important amendment is that of Sec. 3 of Article IV, in that it changes the election of the President, Vice President and Secretary from the hands of the members present at the annual convention and places it in the hands of the whole membership at the annual election, and provides for election by a plurality instead of a majority vote. The attendance at the annual convention is seldom greater than one-tenth of the membership, is largely local, and often largely composed of members voting for the first time. To place in the hands of these members the power of electing such important officers as President, Vice-President and Secretary (the Executive Committee) is manifestly unwise, as it leaves the great body of the membership without voice in this important matter. The change to a plurality vote instead of a majority vote seems desirable, as it means the certainty of an election, while a majority vote would often result in no election. The election is changed to November, that the votes may be counted, results announced, and officers have time to accept and qualify, and be all in readiness to take up their duties on the first day of January.

Sec. 4, as amended, adds the General Manager to the Executive Board, thereby strengthening and broadening the Committee, and at the same time, by making the General Manager a member of the Executive Committee, vacancies in that office could be filled by the Board of Directors as already provided in Article VII.

Sec. 5, as amended, elects the Directors by a plurality vote instead of a majority vote. Last year there was only one Director elected, when there were three vacancies to be filled. This change will prevent a repetition of this trouble. It also gives the Directors power to prescribe some rule for making nominations.

Article V, Sec. 3, as amended, requires the Secretary to turn everything, money, names, addresses, etc., over to the General Manager, after the annual conven-

tion, make a report, and allow the General Manager to pay all bills. In other words, it puts the paying of all bills into the hands of the General Manager, instead of allowing both the Secretary and General Manager to be paying bills.

Article VII is merely putting into words a rule that the Association has been following for some time, but about the correctness of which there has been more or less dispute.

The amendment to Article IX is to prevent the expense and annoyance of being compelled to take a vote upon some personal or unimportant matter. If a majority of the members present at the annual convention do not approve an amendment, there is no use of asking the whole membership to vote upon it.

—♦♦—

LOW RATES WEST AND NORTHWEST.

Via Chicago, Milwaukee & St. Paul Railway, every day until November 30, 1903.

\$33, Chicago to San Francisco, Los Angeles, Portland; Tacoma, Seattle, and many other Pacific coast points. \$30, Chicago to Salt Lake City, Ogden, Grand Junction and many other points in Utah, Colorado and Wyoming. Low rates to hundreds of other points.

Through train service, Chicago to San Francisco. Only \$6 for a double berth, tourist sleeper, all the way.

To the Northwest, via St. Paul or via Omaha. Write today for folder, R. C. Jones, 32 Campus Martius, Detroit.

—♦♦♦—

TRAIN TOOK ITS OWN PHOTOGRAPH.

A large, handsome engraving, 18 x 28 inches, has been made of "The Burlington's Number One" while going at 60 miles an hour between Chicago and Denver. It is the best picture of a train in motion ever taken, and "the train took the picture itself." This is explained in a folder which will be sent free on application. Price of large engraving, 20 cents. Postage stamps will do. Address P. S. Eustis, General Passenger Agent, C., B. & Q. Ry., 209 Adams Street, Chicago.

Winter Losses

Are not always the result of the same cause. They may come from starvation; from poor food; from improper preparations; from imperfect protection; from a cold, wet, or possibly, a poorly ventilated cellar, etc., etc. Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points, consult

"Advanced Bee Culture."

Five of its thirty-two chapters treat as many different phases of the wintering problem.

Price of book, 50 cts.; the REVIEW one year and the book for \$1.25. Stamps taken either U. S. or Can.

W. Z. HUTCHINSON, Flint, Mich.

Names of Bee-Keepers

TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand and arranged in alphabetically (in the largest States), and, although this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a type writer, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly, in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky..... 182	N. C..... 60
Ark.... 130	Kans... 350	New Mex. 56
Ala.... 80	La..... 38	Oregon... 104
Calif... 378	Mo..... 500	Ohio.... 1120
Colo.... 228	Minn... 331	Penn.... 912
Canada 1200	Mich... 1770	R. I..... 46
Conn... 162	Ma-s... 275	S. C..... 40
Dak.... 25	Md..... 94	Tenn.... 176
Del.... 18	Maine 270	Tex..... 270
Fla.... 100	Miss... 70	Utah.... 68
Ga..... 90	N. Y.... 1700	Vt..... 200
Ind.... 744	Neb.... 345	Va..... 182
Ills.... 900	N. J.... 130	W. Va.... 172
Iowa... 800	N. H.... 158	Wash.... 128
		Wis..... 625

WANTED:

Extracted Amber Honey.

Mail sample and state lowest price delivered at Cincinnati. Will buy **Fancy White Comb Honey**, any quantity, but must be put up in no-drip shipping cases.

C. H. W. WEBER,

16 2146-48 Central Ave., Cincinnati, Ohio.

Please mention the Review.

WANTED!

Extracted Honey.

Mail sample and state lowest price. I also want Fancy and No. 1 comb honey, but it must be in no-drip shipping cases. I will pay spot cash.

CHAS. KOEPPEN,

10-93-ft

Fredericksburg, Va.

Prize Winners.

If you wish the best bees and queens, get the Will Atchley "Prize Winners". His stock has won the first prize in New York State at the Dutchess Co. Agricultural Fair held at Poughkeepsie, in September 23-26, 1902. They have also carried off the medal and first prize at the Worcester Agricultural Fair, held at Worcester, Mass., September 1 and 2, 1902. They have also produced the largest yields in California the past season. Read the following letter, such as are being received almost daily.

Jonesboro, Ark., Oct. 7, 1902

Mr. Atchley, Sir:—The queen I got of you in 1901 has proved to be a dandy. The year of 1901 was so dry I did not get 200 pounds of honey from 100 colonies, but in 1902 I have secured as high as 140 pounds from one colony; and the queen I got of you swarmed five times and the first swarm swarmed five times, and the original colony and the first swarm each stored 28 pounds of honey; so you see I have 11 colonies from one, and 56 pounds of honey. I consider this extra for one queen and colony; in fact, it beats anything I have ever seen of heard of. Besides this, I took out eight queen cells and made swarms, and some of them made 56 pounds of honey. If any of you scientific men have had any queens that would beat this, I would like to hear from you. So you see, my Texas queen, as I call her, is a dandy. I want no better. I think she is as good as the best.

JAMES M. COBB.

Untested queens from these races, 3- and 5-banded Italians, Cyrians, Albino, Holylands and Carniolans, bred in their purity, from 5 to 35 miles apart, February and March, \$1.00 each, or \$9.00 per doz. All other months, 75c each, \$4.25 for six, or \$8.00 per doz. Tested queen of either race, from \$1.50 to \$3.00 each. Breeders from \$3.50 to \$10.00 each. 1-2 and 3-frame nuclei, and bees by the pound a specialty. Prices quoted on application. Safe arrival and perfect satisfaction guaranteed. A trial order will convince you. Price list free.

WILL ATCHLEY

P. O. Box 79, Beeville, Bee Co., Texas

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Please mention the Review.

National Bee - Keepers' Association.

Objects of the Association.

To promote and protect the interests of its members.

To prevent the adulteration of honey.

Annual Membership, \$1.00.

Send dues to Treasurer.

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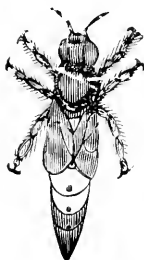
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Daughters of Select Imported Italians. Select long-tongued (Moore's), and select, Straight 5-band Queens, bred 3½ miles apart, and mated to select drones. 80 bees owned within 2½ miles; none imported within 3, and but few within 5 miles. No disease, 30 years' experience. Warranted queens 1.00 each; tested, 2.25 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

POULTRY NEWS.

Twenty-five cents yearly. Agents wanted. Bee department conducted by Fowler, the bee man of Ardley, N. Y. Twenty pages, illustrated and up-to-date.

10-03-11

New Brunswick, New Jersey.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross
Shipped from New York or from factory.

Send for catalogue to

J. H. M COOK, 62 Cortland St. N. Y. City

Please mention the Review.

Queens

Golden and Leather colored Italian, warranted to give satisfaction. Those are the kind reared by QUIRIN THE QUEEN BREEDER. Our business was established in 1888. Our stock originated from the best and highest priced long tongued, red clover breeders in the U. S. We rear as many and perhaps more queens than any other breeder in the North. Price of queens after July 1st, Large Selected, 75c, six for \$4.00; Tested Stock \$1.00 each, six for \$5.00; Selected Tested \$1.50 each, six for \$8.00; Breeders, \$3.00 each; Two-frame Nuclei (no queen) \$2.00 each. Special low prices on Queens in lots of 25 to 100.

All queens are mailed promptly, as we keep from 300 to 500 on hand ready to mail. We guarantee safe delivery to any State, Continental Island, or European Country. Our circular will interest you. It is free.

Address all orders to

QUIRIN THE QUEEN BREEDER,
5-30-01 Parkertown, Ohio.

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee Hives, ready for prompt shipment. Send for catalogue—it's free. R. H. SCHMIDT & Co.,
Sheboygan, Wis.

Please mention the Review

We are the Largest Manufacturer of Bee-Keepers' Supplies in the Northwest
Send for Catalog



Minneapolis, Minnesota.

We Have the Best Goods, the Lowest Prices, and the Best Shipping Facilities

Bee-Keepers

It is a conceded fact that the bulk of the honey of the future is going to be produced in the irrigated portion of what is known as "Arid America." If you are interested in the progress of apiculture in this vast region, you should subscribe for the

Rocky Mountain

Bee Journal,

a twenty-page monthly; price 50 cents per year.

This is now the only bee publication west of the Missouri river. We have several hundred eastern subscribers, and have still room for more. Write for free sample copy. Address

H. G. Morehouse
Boulder, Colo.

The Bee-Keepers' Paradise.

300,000 Acres of Wild Land for sale, in the famous Fruit Belt Region of Michigan, at low prices and on easy terms.

These lands are especially adapted to fruit culture, all the most desirable fruits being cultivated with especial success.

These uncultivated lands also produce immense quantities of wild berries, from which large crops of honey are obtained, at a good profit to the Bee-Keeper.

Write for particulars and circulars.

"No trouble to answer letters."

Address:

J. E. Merritt,
Gen'l. Mgr.

Michigan Land Co.,
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At Root's Prices
Pouder's

Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

WALTER S. POWDER

512 Mass. Ave.

INDIANAPOLIS IND.

Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, because it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation for cash

a specialty. BEESWAX ALWAYS WANTED at highest prices. Catalog giving

Full Line of Supplies

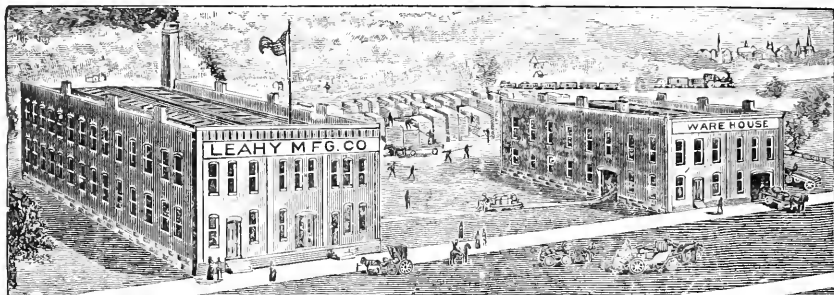
with prices and samples, free upon application. Beeswax wanted.

GUS DITTMER,

Augusta, Wisconsin

E. Grainger & Co., Toronto, Ontario, Sole Agents for Canada.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinued separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price; only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the

REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,

JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*. Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

Are You One of Them?

Goods. We are their authorized jobbing agents for this State. Send your name for 1903 catalog. Early order discounts 4 per cent to January 1, 1903; 3 per cent to February 15, 1903.

M. H. HUNT & SON, Bell Branch, Mich.

6 Years

This will interest you.

DULUTH, Minn., April 24, 1903.

Please send me a box of **Yellowzons** for the enclosed \$1.00. We have used this remedy, now, for six years and have increased the scope of their use until this is about the only remedy we make use of.

(Rev.) S. C. Davis.

This I have always claimed—that the more you know of

YELLOWZONES

and the longer you use them the better you will like them. And, further—that they are *Absolutely Unequalled* as a general household remedy. Just read that testimony again. A man doesn't send his dollars time and again, year after year, for the same remedy unless he's getting *mighty good results!* You know that. 100's of substantial beekeepers have been my customers just as long as he, and their kind words and *continued patronage* tell the same story.

If you keep but One Remedy in the House it should be YELLOWZONES.

\$1.00 per Box of 150 Tablets.

Trial size 25 cents.

Your money back, and *Another Box* if not satisfied.

W. B. House, De Tour, Mich.

Please mention the Review.

THE AMERICAN BEE-KEEPER,

FALCONER, N. Y.

Is one of the leading illustrated monthlies of the world, and it is sent three years for one dollar, in advance. Sample copy free.

Please mention the Review.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold.

Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

WE PAY THE FREIGHT. THERE ARE FIVE CONDITIONS.

RIVER FALLS, Wis., October 16, 1903.
Freight charges cut quite a figure in the purchase of bee-hives and supplies. In view of the recent advances in prices, and as an inducement for early orders, we have decided to prepay freight to the amount of forty cents per 100 pounds on shipments requiring this amount for transportation. This will carry our goods at home prices as far south as Chicago. Our rate to Hinkley, Minn., 39 cts.; Crookston, Minn., 60 cts.; Peoria, Ill., 40 cts.; St. Louis, Mo., 42 cts.; Omaha, Neb., 53 cts.; Kansas City, 64. Our rate to St. Paul and Minneapolis is 16 cts. per 100 lbs; so a forty cent freight rate would carry our goods considerably beyond these points, in cases where they are obliged to pass through those points. We make some conditions, and we cannot allow these freight allowances unless the customer complies with our conditions, which are: 1st. Cash must accompany the order. 2nd. It must be an early order—not later than Feb. 1, 1904. 3rd. It must be at prices which we established Sept. 1st, 1903. (We send them on application.) 4th. The amount of the order must be for not less than Twenty Dollars. 5th. A copy of this ad. must accompany the order. The usual cash discounts for early orders (5 per cent for November, 4 per cent for December and 3 per cent for January) also apply. Send in your list of requirements for detailed estimates.

W. H. PUTNAM,

10-03 3t

River Falls, Wis.

WANTED—One or two tons of honey (4x5 sections preferred, but can use other sizes). Correspondence solicited from parties in this state, giving lowest cash price, etc. If favorable I will call, if not too far away.

A. W. SMITH,
Birmingham, Mich

10-63-2t

Superior Stock



For several years I have been selling a strain of bees that I have called the Superior Stock. While I often receive testimonials in regard to their superiority, it is very seldom that I publish one. Sometimes the temptation is too great to be resisted, and this seems to be one of those occasions. Here it is:—



North Kingsville, Ohio, Aug. 24, 1903.

Mr. W. Z. Hutchinson,
Flint, Mich.

Dear Sir:

The tested queen you sent me in 1900 is still prolific. Her colony and that of one of her daughters, in 1901 stored as much honey as **ten** colonies of hybrids. It was not a very good year for honey but there was plenty of room on the red clover for The Superior Stock. Hybrids gleaned a little dark honey from various sources while the Superior Stock stored white honey. The Superior Stock is rightly named.

Yours truly,
HERMANN E. CROWTHER.



Remember I guarantee safe arrival, safe introduction when directions are followed, purity of mating, and entire satisfaction to the extent that the queen may be returned any time within two years, and the money will be refunded, together with 50 cts. extra to pay for the trouble. The price of a queen alone is \$1.50, but I will send the Review one year and book your order for one of these queens to be sent next spring, for only \$2.00.

W. Z. HUTCHINSON,
Flint, Michigan.

Victor's Superior Italians

Go by Return Mail, and are Guaranteed to Give Satisfaction, or Money Refunded.

I am ready with the same old true and tried stock of Italian queens and bees as of old. My queen-mothers in yards No. 1 and 2 are serving their fourth year in that capacity, 1900-1903. Their daughters have pleased The A. I. Root Co., W. Z. Hutchinson, O. L. Hershisier, G. M. Doolittle, R. F. Holtermann, F. B. Simpson, and many others prominent in apiculture. In fact, every customer has been pleased as far as I have heard. I COULD FURNISH HUNDREDS OF THE VERY STRONGEST TESTIMONIALS, but space forbids. Practically all the queens that I have sent from these yards were daughters and grand-daughters of the two "Oil Wells," as we often call them. Untested queens, \$1.00 each; select untested, \$1.25 each; tested, \$2.00; breeders, \$3.00 to \$7.00. Send for illustrated price list.

W. O. VICTOR, QUEEN SPECIALIST WHARTON, TEXAS

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the REVIEW. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Please mention the Review.

— If you are going to —

BUY A BUZZ-SAW,

write to the editor of the REVIEW. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

Please mention the Review.

Make Your Own Hives.

Bee - Keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

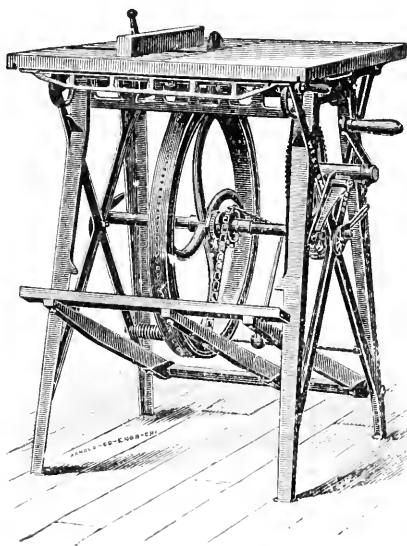
Machines on trial.
Send for Catalogue.

W. F. & JNO. BARNES CO.,

384 Ruby St.,

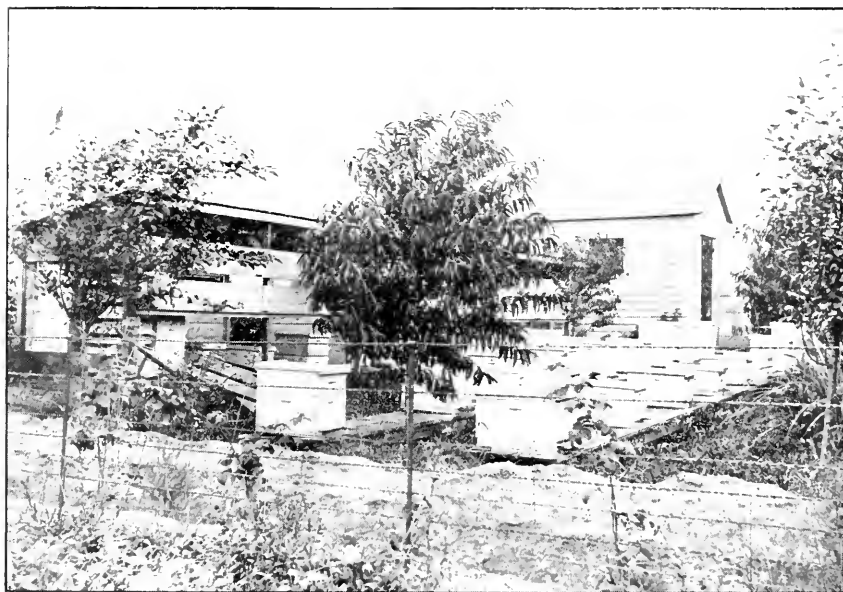
Rockford, Ills.

7 -02-24t





John P. Tull. His Apiary and Bee-Shed.



Bee-Shed, Honey-House and Apiary of John P. Tull.

The Bee-Keepers' Review.

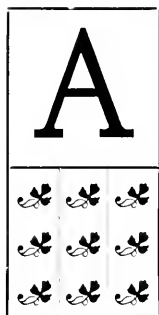
A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL. XVI. FLINT, MICHIGAN, NOV. 10, 1903. NO. 11.



NEAT APIARY, BEE-HOUSE AND SHED.
BY JOHN P. TULL.



Friend Hutchinson—
I am sending you per
this mail, two views of
my apiary, taken from
opposite sides of my lot.
The apiary contains 30
hives, and is situated

about 350 feet back of my house; therefore we are never annoyed there by the bees.

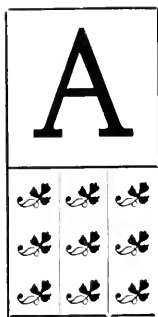
One view shows my bee-house, 8 x 12 feet in size, which is very convenient. It has three windows and a door, which are covered with copper screens to keep out all flies and bees, when same are opened for ventilation when working inside. The floor is about 18 inches above the ground, with benches on two sides of the building. Under these I can store about 40 supers. Overhead I have racks upon which to hang brood combs when not in use. The house is made of German siding boards, with slate roof, and is painted a cream color. Connected with the house is a bee-shed 50 feet long, having a slate roof, with sides of plain boards. The back of the same has two doors; and a board a foot wide is dropped on hinges the whole length, and there are two openings the same on the front; this gives

plenty of ventilation and light, and makes a cool place in summer. In the winter these openings are all closed. This shed and house also afford great protection as a wind-break to the other hives which are on platforms in the open air. Between the platforms the grass is kept well cut, and the trees and branches you see are peach trees. Last year I had a fine crop of honey all in sections, but this year was an entire failure on account of the unfavorable weather. A little honey is coming in now for winter use, but will have to feed also to have sufficient stores.

For convenience in keeping a record of my hives, you will notice they are all numbered with brass numbers on the covers in front. If a colony swarms I simply remove the cover and place it on the new hive on the old stand, and put another cover with the old hive on a new stand. This still keeps all the hives in their original position.

In the winter the openings in the bee-shed front are closed at the two upper openings, by simply pushing up the boards, which are hinged at the bottom and are hooked at the top. These boards or doors also have chains on, which enables me to open them early in the spring from an inch to the full width by simply hooking a link of the chain onto a nail.

Lawndale, Penn., Sept. 23, 1903.



ALL HONEY NOT CONTAMINATED IN A FOUL BROODY COLONY. BY ELMER TODD.



Friend Hutchinson—
Back numbers of the Review have been received and contents partly digested. I am

specially pleased with C. A. Huff's article on foul brood, and have ordered galvanized iron to line a room 10 x 5 x 8, and am going to give the formalin method a thorough test next summer.

I have been experimenting with foul brood with a view to saving all I could with safety from a diseased colony, hoping to eventually save all the combs if possible without having to render them apart, and am very glad if Mr. Huff has solved the problem.

Some of my experiments have turned out well and might be of interest to some of the readers of the Review, so I give the following: While working with diseased colonies my observation has led me to believe that not all the honey in the combs of a diseased colony is of necessity contaminated, and that unfinished sections from such a colony are not very likely to be a source of contagion when placed on a healthy colony, and this summer I concluded to test the matter as fully as my supply of material and time would permit.

In making my annual clean up of foul brood (I perhaps ought to explain here that I am so located that I have a fresh supply brought in every fall and spring by robbers) I left five strong colonies for experimental purposes, those which I knew the foul brood would not injure for honey gathering this season even though they were not freed from the disease. Two of them I had inoculated by using diseased combs which I had tried to renovate, but not by the formalin method. At the opening of the clover-flow, they

had just a few cells of diseased brood, the worst one having probably not over 50 diseased cells in a brood nest of 12 L. frames of brood. They all swarmed on their first case of sections and I prepared hives for the swarms on your plan of furnishing the brood chambers with frames having only narrow starters of foundation, placing a queen-excluding zinc on the frames and then the case of unfinished sections from the parent colony on top of that.

Now, if foul brood is in *all* the honey from a diseased colony, then all those swarms ought to have developed the disease in some of the first brood reared, because from the very start they had free access to the partly filled sections from the diseased parent colonies. They were hived in June, and all through the summer and up to the present time they have not shown the first symptom of the disease.

After allowing the swarms a month's time and seeing no symptoms of the disease, I then gave unfinished sections from diseased colonies of last season to three clean colonies, and up to date they show no diseased brood. If foul brood is in *all* the honey from a diseased colony, to what do these colonies owe their immunity?

In the case of the swarms it (the disease) was not in the sections, nor in the honey sacs of the bees composing the swarm, or else immunity from disease was due to the conditions under which they were hived, which were as follows: A large swarm (during a slow but steady honey flow) hived on starters in the brood nest with drawn comb above a queen-excluder. The bees must have stored into the sections all the honey they brought with them, or else used it up in comb-building before there was any brood to feed, but as the field furnished ample supplies, they fed no honey from the sections, but, instead, kept on storing in them.

When using the unfinished sections from last year, they were put on three

different colonies (in tiering up) when they needed surplus room. Of course these colonies had brood nests below, with brood in all stages of development, but the bees apparently carried none of the honey below, or else there were no disease germs in it.

The results of the above experiments convince me that there is not much, if any, danger in using unfinished sections from a slightly diseased colony when placed on a healthy colony during a honey flow. They also indicate that all that is necessary in curing a diseased colony, having a force of bees sufficiently numerous to draw surplus combs in sections and not inclined to cast an early swarm, is to wait for a honey flow, get the bees nicely started in the sections and then remove the contents of the lower story, brushing off all the bees from the combs and replacing the combs with frames furnished with narrow starters of foundation, a queen-excluding zinc between them and their partly drawn and filled sections. The combs of brood can be taken to a new location and given the McEvoy treatment after most of the brood has hatched.

Ten minutes work and the colony is cured, and will keep on storing in the sections the same as a newly hived swarm hived on the Hutchinson plan. I arrived at this conclusion too late in the season to test it, but shall try it at the first opportunity.

York, Neb., Sept. 27, 1903

[There is no doubt that much of the honey in some hives containing foul brood is free from contamination. Suppose, after the honey season is over and the honey is sealed, germs of foul brood are brought into the hive. They will start the disease in the colony, if they come in contact with any of the brood, but the sealed honey will remain free from the germs so long as it *remains sealed*.

Mr. R. L. Taylor once reported taking a comb of honey from a foul broody colony and giving it to a healthy colony

without its starting foul brood. This comb of honey was taken from the upper story, or else was an outside comb from lower story—I don't remember which.

When honey containing germs of foul brood is brought into a hive and fed to the brood, each larva so fed dies. It settles down into a ropy, gluey mass, and finally dries down into a thin, hard, brown scale upon the lower side of the cell. Honey stored in this cell becomes contaminated, and, if fed to larvae causes them to die with foul brood. In this way it gradually spreads in the hive.

When there is a good honey flow every available cell is filled with honey. The cells containing germs of disease are filled with honey and *sealed up*. All of the diseased honey becomes covered up with new, healthful honey, and is sealed up, and the honey fed to larvae is of this new, healthful honey. Brood is reared successfully in all cells that have never contained foul brood. So completely is the foul brood covered up and out of sight during a good honey flow, that many have been deceived and led to believe that it has been overcome. It is simply covered up, and all of the honey that the bees are handling is new, pure, healthful honey; and honey put into the supers at such times is almost sure to be free from foul brood. This probably is the explanation of why the putting upon healthy colonies of unfinished sections taken from foul broody colonies did not cause foul brood to appear in the colonies upon which they were placed.

Another thing: When honey is coming in freely, the brood is almost sure to be fed upon the freshly gathered honey, and it is not at all likely that honey would be brought down from the sections and fed to the brood.

Mr. McEvoy has repeatedly told us that extracting combs from the supers, combs that has contained no brood, might be saved and used with safety, after being cleaned up by the bees; and it is more than likely that in many cases the honey, too, might be used with safety.

I can think of one condition under which foul broody honey might be stored in the sections, and that is as follows: A foul broody colony swarms. In three weeks the young queen begins to lay, and the bees clean out the brood nest as best they can, to give her room to lay, carrying the honey up into the sections. In this case the sections would be liable to contain some foul broody honey.

While I don't believe in taking any foolish, reckless chances with foul brood, I do believe in experimenting with a view to learning to save everything possible.—
ED. REVIEW.]



POINTS OF SUPERIORITY IN THE FOUR-PIECE SECTIONS.
BY C. H. DIBBERN.



Mr. W. Z. Hutchinson,

Dear Sir—You are 'mighty right' in your comments on the four-piece sections in last Review. I have used

these sections for many years, but ran short this season, and used several thousands of the one-piece. Now, in handling and scraping the sections and in casing the honey, I can see the difference. True, it takes a little longer in putting four pieces together, but that is more than made up in scraping off the propolis, and then in looks they are simply "not in it" with the four-piece. Then, too, the one-piece section has a "bad habit" of breaking off the bottom piece, when removing the honey from the hive case.

Friend H., can you refer me to the best factory making the four-piece section in perfect shape? The last lot I had were not good and I want to try another factory.

Milan, Ill., Sept. 26, 1903.

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

Entered as second-class matter at the Flint Postoffice Feb. 2, 1888. Serial number, 191.

Terms—\$1.00 a year to subscribers in the United States, Canada, Cuba and Mexico. To all other countries postage is 24 cts. a year, extra.

Discontinuances—The Review is sent until orders are received for its discontinuance. Notice is sent at the expiration of a subscription, further notices being sent if the first is not heeded. Any subscriber wishing the Review discontinued, will please send a postal at once upon receipt of the first notice; otherwise it will be assumed that he wishes the Review continued, and will pay for it soon. Any one who prefers to have the Review stopped at the expiration of the time paid for, will please say so when subscribing, and the request will be complied with.

Flint, Michigan, Nov. 10, 1903

KEEP more bees.



SUCCESS is sometimes spelled a-u-d-a-c-i-t-y.



C. P. DADANT, who will be Secretary of the National Association next year, is too well and favorably known to need any introduction.



THE OFFICERS of the National Association for the ensuing year were exceedingly well chosen, and will, I believe, give entire satisfaction.



JAS. U. HARRIS, the newly elected President of the National Association, is probably as good a parliamentarian as we have in our ranks—perhaps the best.



EDITOR HILL has made a very beautiful and tempting picture from a slab of honey (not the regulation sections), a knife, spoon, glass of milk, and a few slices of bread on a plate. It has appeared in Art and Photography and the American Bee-Keeper, and is the best of anything I have seen in this line.

THE Colorado State Bee-Keepers Association will meet in the Chamber of Commerce Hall at Denver, Nov. 23, 24 and 25.

BRO. YORK has very wisely, so it seems to me, given up the supply trade and will hereafter devote his whole energies to the American Bee Journal.

A MAN sometimes waits until he is "dead sure" before venturing, only to find that some other fellow who has taken a few chances has got there ahead of him.

GEO. W. BRODBECK, the newly elected Secretary of the National Association, is a representative California bee-keeper, well known and popular, and his election is a deserved compliment to the Golden State.

CUBA as a Bee and Honey Country is the subject of a very neat little illustrated pamphlet by the A. I. Root Co., in which both sides of the subject are treated with apparent fairness. I think the book is for free distribution.

JOHN H. RISING, of Gaskell Corners, N. Y., and Miss Mary Louise Smith, of Flemingville, N. Y., were married October 14th, and they were thoughtful enough to send the Review a copy of the paper giving an account of the beautiful home wedding. May their lives be long and happy.

"THE FLORIDA BRUSH" is a new brush for brushing bees, a sample of which has been sent me by the W. T. Falconer Mfg. Co. It is made of broom corn, something like the Cogshall brush, but longer and more loosely tied. It seems as though it would be a good thing with which to brush off bees.

MR. G. B. LEWIS, of the firm of the G. B. Lewis Co., passed away last June, but no notice was sent out to the bee journals until lately. I did not have the pleasure

of a personal acquaintance with Mr. Lewis, but all agree that he was a man of inestimable character and solid worth.

FOUR-PIECE sections have many friends as is shown by the letters I receive. The one by Mr. Dibbern, given in another column, is a fair sample of them. I believe the time is now ripe for some one to begin the manufacture and sale of four-piece sections—to make a specialty of it and advertise them. If the white poplar is lacking, make them of hard maple.

TELLING TALES out of school is what I may be doing, but Harry Lathrop, of Monroe, Wisconsin, has a small volume of poems in press. The book is being printed on the finest Cameo Plate paper, and embellished with numerous fine half-tone engravings. Yes, the work is being done at the Review office, and full particulars will be given as soon as the book is out.

AUTUMN WEATHER is my favorite. The heat of the summer is past. The sunshine is no longer glaring; instead it is golden and mellow. Vines and trees are laden with a luscious ripeness. Forests are painted with a beauty truly gorgeous. Dead leaves rustle under the feet, and send up their woodsy odor. A crispness in the air fills one with the joy of living. Autumn brings the fulfilment of hopes and of Nature's promises. 'Tis the crowning season of the year.

MANAGER FRANCE is getting out a report that will throw all other annual reports of this kind in the shade. Instead of simply a dry list of the names of members, it will give the number of colonies with which a member began the season, the number with which he closed the season, how he winters his bees, whether

indoors or out, if he pays taxes on his bees, and if so, how much, and how much honey he has produced this year, and the kind.

E. L. PRATT, otherwise known as "Swarthmore," it seems, was the first to publish a description of introducing virgin queens several days old to nuclei, by caging the queens in the nuclei while the preceding queens were becoming fertile, and the American Bee Keeper was the bee journal to publish the article. The details were not the same as those in the article I copied from Gleanings, but the principle is the same; and the Review begs pardon for not having read more closely.

MR. A. D. D. WOOD, of Lansing, Michigan, has taken in a partner by the name of Brush, and the firm will be known as the Wood-Brush Hive and Box Co., and I expect they will make things hum. They are offering ten per cent. discount on hives bought before Dec. 10th. It will be worth your while to get a price list. I give them this notice here, as their ad. came in too late for the adv. pages, and the announcement of the ten per cent. discount would do them no good in the December issue.

THE NORTHWESTERN CONVENTION, the "convention that stands next to the National," will meet in Chicago Wednesday and Thursday, Dec. 2 and 3, at the club rooms of the Revere House, corner North Clark and Michigan streets. Seventy-five cents per person, per night, for lodging, when two persons occupy the same room. Meals 35 cts. Dr. Miller, N. E. France, E. R. Root, E. T. Abbott, J. Q. Smith, Jas. A. Stone, Huber Root and the editor of the Review have all signified their intention of being present.

QUEENS are often "cooked" on their way to California, and after passing through the Great American Desert, where

the temperature sometimes reaches 118 degrees, I can understand how this can happen. Early or late in the season, not in midsummer, is the time to send queens to California. By the way, there is an opening in the Golden State for a first-class queen breeder. He would receive a liberal patronage, as his queens would not have to pass through the heat of the desert.

THE NATIONAL ASSOCIATION is forging ahead with great leaps and bounds. It now has a membership of nearly 1 600, and before the close of another year will, in all probability, reach the 2,000 mark. Its membership is away ahead of any other similar association in the world. It has done much for bee keeping, and, as it is growing in power almost daily, it is likely that its usefulness will be greatly increased. All of its officers, with only one or two exceptions, are extensive, practical bee-keepers, and know from experience what bee-keepers need.

ARTHUR C. MILLER writes me that in the case of a queen securing food while caged, the inference is that bees having the proper food came near enough for the queen to "ask" for and obtain it, while in the other case the proper bees did not come near enough, or, if so, were unwilling to "give." The point that he wishes to emphasize is that a bee does not go around holding out her tongue offering food. An outstretched tongue is always a "seeking" or "feeling" tongue. On this point Mr. T. S. Hall, of Jasper, Ga., writes me that he has for years been introducing queens by caging them in a cage containing no food, and he has noticed that the queen extends her tongue through the wire cloth to be fed.

THE TIME for putting bees in the cellar will be here before another issue of the Review is printed. While I would leave them as long as I thought there was a *reasonable* chance for their having an

other flight, I don't attach so very much importance to these extra late flights. After the bees have settled down for their winter nap they are consuming very little honey. The matter of two weeks does not use up much honey. The bees may be put into a cellar, and the doors and windows all left open until cold, freezing weather comes. This gives the bees the benefit of the fresh air, if there *is* any benefit, the same as though out upon their summer stands.

MR. A. I. ROOT spent nearly a week with me, or in my company, while going to the Los Angeles convention. We had a number of long talks together and probably got better acquainted than ever before. Since his return he has said a number of very kind things of the Review and its editor. W. P. Root, the proof reader of Gleanings, has also copied from and complimented the Review, in the department that he conducts in Gleanings, in a way that it has never before been praised. E. R. Root has waxed almost enthusiastic over the work that I have done in the photographic line. Did I not know these good friends as I do I should fear that they were indulging in flattery, but I know that they mean what they say, and I thoroughly appreciate the feelings that have prompted these utterances, and the best I can say is, I will try to deserve them.

FAILING COMPETITION is the worst competition that a man can have. A merchant may be able to withstand the competition of a successful competitor, but the competitor who fails in business, and his goods are sold at a sheriff's sale—that is the kind of competition that cuts the ground from under a competitor. Bee-keepers have that kind of competition to contend with in the shape of the farmer with a few hives of bees who takes his honey to market and sells it for what he can get. Some have said: "You must be a poor bee-keeper if you can't raise

honey as cheaply as the farmer bee-keeper." Let the farmer bee-keeper try to make his living raising honey in this way and marketing it in this manner, and see how he will come out. The facts of the case are that his honey costs him more than he sells it for, only he doesn't know it. It is competition of the failing kind.

MAILING cages for the shipping of queens are not strong enough. Several have reached me the past year in a crushed condition—in some cases the occupants had escaped. Every little while we see items in the journals telling of similar experiences. It was this very thing that caused queens to be thrown out of the mails years ago, and it will cause them to be thrown out again unless it is stopped. The only possible objection there can be to larger, stronger cages is that we may have to pay one cent more postage on each queen we mail, but that is a trifling matter compared to having mailing privileges denied us. Let every dealer provide cages this winter in readiness for the next season's trade, and be sure that they are strong enough to stand the enormous pressure to which they are subjected when the mail bags are corded up several feet in height. One thing more: Don't cover the wire cloth with simply a thin cardboard. Years ago we used a wooden cover nearly $\frac{1}{4}$ of an inch in thickness, and it is a pity such covers were not kept in use. A cover of heavy, tough cardboard would be all right, but some of the paper covers used are very flimsy—might almost as well be left off entirely.

WHY PROSECUTED MEMBERS OF THE NATIONAL SHOULD BEAR A PORTION OF THE EXPENSE OF A SUIT.

A month or two ago, the Review asked why the National Association should not bear the whole of the expense of a suit brought against any of its members. Mr. James Heddon writes why he thinks it ought not to bear the whole expense, and

the reason is worth considering. He says: "A reason that I should give why a prosecuted member of the National Association should be expected to bear at least a portion of the expense of a suit at law, provoked by him, is the same that causes fire insurance companies to insist that the insured shall carry one-third of the risk. Sometimes, some people, like Dean Swift, get awfully quarrelsome, even cranky, if they have a powerful ally to fight all the battles that they can precipitate. It is no doubt well that the prosecuted member should meet a small, cautionary part of the expense."

TRY AND REALIZE YOUR HAPPINESS.

Many men are working hard and practicing economy, making the old overcoat do one more winter, looking forward hopefully to the time when fortune may smile on them and they will be happy. No matter how rich they may become, such men will never be any happier than they are right now. The man who is working and saving to buy a home, who has a loving wife by his side and little children clambering over his knees, is drinking the wine of life.

ARTIFICIAL HEAT FOR WINTERING BEES.

In one of my recent trips as inspector of apiaries, I came across a man near St. Clair, a Mr. Richard J. Radike, who has for several years been wintering his bees in an old store-building, keeping them warm with a fire in a coal stove. The number of colonies varied from 25 to 60, the size of the room was about 20 feet square, and a small fire kept burning all the time. There was no attempt to keep the temperature at a certain point, but it hovered around 50 degrees most of the time. For the first year or two it seemed as though the air in the repository was too dry, and a dish of water was finally set upon the stove and this seemed to remedy the difficulty. The bees wintered perfectly, but it always was necessary to set them out early as they became uneasy

as soon as the warm days began to come. Usually they were set out the latter part of March. The building was not even plastered, simply sided up on the outside and ceiled upon the inside. The stove was kept in the same room with the bees.

APPRECIATIVE WORDS.

When one has worked hard for the accomplishment of a worthy object, it is pleasant to know that there has been something accomplished. Every little while there is a line or two in a letter that is quite cheering. For instance, one subscriber writes: "I like the Review because it tells us what to do, and then *encourages us to do it.*" I think the mission of the Review was never described in fewer words. Another writes: "I may say, candidly, with no desire to flatter, that your appeals to 'spread out' have been a great incentive to me. I now have 205 colonies, and expect to increase to 300 another year."

SHORT CUTS AND SIMPLER METHODS.

Most beginners in bee-keeping do a lot of useless work. Useless in one sense, in another it is not. It teaches what to do and what not to, and the latter is fully as important as the former. In the primitive bee-keeping of some years ago, the hiving of the swarms, the putting on of the surplus arrangements, and the taking off of the crop, was about all that was done. Between this and the fussing of the amateur lies the golden mean. Learning how to do things had to come first—now many of us are studying how to avoid doing things.

A bee-keeper had 60 colonies of bees. When it came swarming time, for about six weeks he gave most of his time to working with his bees. He had to be there, or thought he had to, in order to hive swarms and do whatever manipulation was necessary. Last year he sold the bees as they took up so much of his time that he was neglecting his farm. The man who bought them (I might as

well tell who it was that bought them—it was Mr. E. B. Tyrrell) worked them for extracted honey, and adopted such short-cut methods that he was able to do the work by being with the bees about one day in seven. The man who sold them was sick of his bargain. He did not suppose bees could be managed with so little work. This illustrates what I am trying to express, viz., that some of us need to learn how to do less work with our bees.



MULTIPLY YOURSELF BY MEANS OF HIRED HELP.

Many a man accomplishes much less than he would did he not insist upon doing everything with his own hands. The time was when I set up the advertisements in the Review, when I "made up" the forms, when I trimmed the paper, addressed the wrappers and wrapped up the papers for the mail. I now do none of these things. I have found it more profitable to show somebody else how to do it, and pay them for doing it. In fact, I have about reached the point where I find it does not pay me to do anything that I can hire done.

If a man "keeps more bees," as I so strongly advocate, he may be obliged to hire help, and he will find it greatly to his advantage to do so if there is any need for it. You can teach a man how to extract honey at least nearly as well as you can do it yourself, and his help will enable you to keep twice as many bees.

The most successful men are those who hire others to help them.



SUPPORTING FRAMES ON NAILS.

Mr. E. B. Tyrrell has sawed off the projecting ends of the top bars to his frames, or rather, he makes his frames without the projecting ends, and for a support, he drives a six penny finishing nail into the frame about half an inch below its top. This nail takes the place of the usual wooden projection of the top-bar, and a moment's reflection will show what a meager chance the bees have for gluing

it fast. It seemed to me that the frames would not hang true, that they would swing a little over to one side or the other, but the support is so near the top that this does not occur. Like his hive-cover and bottom-board, Mr. Tyrrell has had this style of support in use only one season, but so far he is well pleased with it. I must say that I was delighted with the simplicity and cheapness of these three things, the bottom-boards, the covers and the hive-supports. His frames are simple, plain, all-wood frames, nailed up from stuff cut off the edge of $\frac{7}{8}$ lumber. The top-bars are $\frac{3}{4}$ thick, and the end- and bottom-bars about 5-16. He can step up to a hive, take off the cover and take out a frame, just about as quickly as though it were an empty hive that had never contained bees, and use no tools except those given him by nature—his fingers. There is no prying loose. How anybody could think of going back to Hoffman frames after using this arrangement would be beyond my ken.



A "DIRT-CHEAP" BOTTOM BOARD.

Mr. E. B. Tyrrell, of Davison, Michigan, has been using a bottom-board this year that is literally and figuratively "dirt-cheap," in fact, *is* dirt or earth. First, the hive-stand is made of rough, inch lumber sawed into strips about three inches wide, and nailed up so that the stand is the same size as the bottom of the hive. In fact, it is a shallow box, three inches deep, without top or bottom, but the same size as the hive. I said it was three inches deep, but the front piece, the one that comes below the entrance of the hive, is only two inches wide. The stand is placed in position, leveled up, and then filled with earth or sawdust, to within an inch of the top—just level with the top of the piece forming the front. When the hive is set upon the hive-stand the bottoms of the frames come about an inch, or a little more, from the earth below.

At first thought this seems like a very rough, primitive affair, as though simply

using the earth for a bottom-board would not answer, but it is difficult to say *why*. Mr. Tyrrell has used this kind of a bottom-board in one apiary all of the past summer, and he says that he has been unable to discover any objection.

If it is desired to move a colony, simply turn the hive-stand bottom side up, lay a piece of burlap, or wire cloth, over the hive-stand, set the hive upon it and fasten it there, and the hive is ready for moving. The narrow front piece to the stand allows of ventilation, even if several hives are stacked up one above the other.

NO NEED FOR BOTTOM-STARTERS.

In all of my experience I have seen no need for the use of bottom starters in sections. If the upper starter is to lack half an inch of reaching the bottom bar, then a bottom starter may be necessary in order to have the comb well attached to the bottom bar, but if it comes down to within one-eighth of an inch of the bottom, it is well nigh impossible to say, by looking at the section after it is filled, which side up it grew. This has been my experience with thousands and thousands of sections, covering years of experience. The assertion is made that if the foundation is allowed to come down so near the bottom it will sag and buckle from striking the bottom-bar. If one-eighth of an inch is allowed at the bottom, no trouble from this source will arise. Suppose the foundation should stretch enough to strike the bottom-bar, and bend a little out of true, that is no sure sign that the finished comb will be bulged. The cells upon one side may be a little deeper than upon the other, that is, the midrib may not be in the center of the comb throughout its entire length, but the comb will not be bulged even if separators are not used, while, if they are used, it could not occur.

I wish that some of those who think they must use bottom starters would try a few sections filled with foundations as I have instructed.

MORE EXTENDED TESTS ARE NEEDED WITH FORMALIN.

N. E. FRANCE, State Inspector of Apiaries for Wisconsin, in a communication just received, says that he has just returned from a 280-mile trip to the northern part of the State where he went to examine 300 combs that had been fumigated, July 27, with formalin gas, to kill the germs of foul brood, and then bees put upon them. Every comb contained foul brood. He says that the gas does not penetrate the cappings nor the honey, nor kill bees just ready to hatch, but still protected by the cappings.

I see by Gleanings that some failures with formalin have been reported. Let us not be too hasty in throwing it aside. I have recently been talking with Mr. C. A. Huff, and he says that with freshly extracted combs, taken from foul broody colonies, he has been successful in destroying the germs with formalin gas, but he has little faith in its efficacy where the cells are sealed, or where the scales have dried down hard. If we can fumigate the extracting combs and be able to use them it will be something. Of course, I don't know the particulars in regard to the combs that Mr. France writes about, and it would be interesting if he could give them. Bro. France, were they freshly extracted, or were they old and dry? Another thing, how were they fumigated, and how long?

Since the foregoing was put in type, I find the following in the Rocky Mountain Bee Journal:

Last spring the editor of the Journal fumigated a set of foul broody combs with formalin gas. Foul brood was present in all of its stages, except the dried scales. They were placed on a healthy colony, the bees cleaned out the foul matter and raised perfectly healthy brood.

A FEW WORDS ABOUT PYROGRAPHY.

It is truly wonderful that, in the rushing throng of a crowded city, among the thousands and thousands that hurry and skurry hither and thither, two friends

from distant States should chance to meet—but sometimes they do. Walking along the streets of Chicago, I heard some one shout, "Hey! Hey!" I did not suppose any one was shouting to me, but I turned about to see N. E. France standing in the door of a restaurant and beckoning to me. I went in and we had breakfast together. We had scarcely started out after breakfast before we ran up face to face with the genial S. A. Niver, he of York State fame. Nothing would do but we must go up to his office, where himself and son-in-law were manufacturing an improved pyrograph. I presume that most of my readers know something about pyrography, but for fear that some may not I will explain that it is the making of pictures on wood by means of lines made with a heated metal point—usually heated by gas from gasoline. The work is often used in decorating the wood work of rooms or furniture. Mr. Niver and his son-in-law have made a decided improvement over the ordinary pyrograph, in that, near the end of the heated point they have an opening through which the heated gas can escape, and this gas is so hot that it can be used to scorch or brown the surface of the wood. The hot point can be used in making black marks, but the hot gas can give almost any degree of color from a slight brown to black brown. In the hands of a skilful operator, the combined tool can be made to perform wonders—give bold effects or the most delicate shading. We were shown some specimens that were truly pictures. Any one interested can secure further particulars by addressing J. G. Tyssowski & Co., 1111 Schiller Building, Chicago, Ills.



MAKE YOUR OWN HIVES.

There has been a very sharp advance in the price of bee supplies—notably in hives. As a result, if there ever was a time when it might be profitable for some kee-keepers to make their own hives, it is now. Nearly all bee-keepers are located within reach of a planing mill, and at

such a mill the bottom-boards, covers and bodies of hives can certainly be cut out more cheaply than they can be bought of some supply manufacturer—to say nothing of the freight. A bee-hive does not need a lot of fancy fixings. A plain board for both bottom and cover, with cleats at the ends to prevent warping, is all right for a large majority of localities. It is exactly what I should choose for this locality. Some $\frac{3}{8}$ strips sawed from $\frac{7}{8}$ lumber can be tacked around three sides of the bottom board, (on top, at the edges) to raise the hive from the bottom board, and just the plainest kind of a plain joint at the corners of the hive, just as a common box is nailed together, is all right for the body of the hive. A plain rabbet for the frames to hang in is all right here. Such a hive as that can be cut out at any planing mill or may be cut out with a foot power saw, and the veriest tyro can nail it up and paint it.

As for frames, I ask for nothing better, in fact, *prefer* simple all-wood frames, the stuff cut from the edge of a $\frac{7}{8}$ board; the end-bars and bottom-bars being $\frac{3}{8}$ thick and the top bar $\frac{1}{2}$ inch thick, the pieces being nailed together with the right size of cement coated wire nails. Such frames all nailed up ought not to cost over \$1.00 a hundred.

With the prices in view that bee-hives are likely to reach, it will be well for bee-keepers to be rigging up or buying a buzz-saw, building a horse power, putting up a wind mill or buying a gasoline engine. Foot power will answer if there are not too many hives to saw out.



TAKE GOOD CARE OF YOURSELF.

In a newspaper that I picked up the other day, I came across the following:

When a man comes to sixty years of age he then begins to realize on his early investment of good sense in spending the years of young manhood in a right way.

It struck me quite forcibly. While I not yet 60, being in the early 50's, yet I so often meet men of my age who are all broken down—old men before their time.

Every little while some man says to me: "Mr. Hutchinson, I haven't seen you for a dozen years, when I met you at the State fair, and I can't see as you look a day older than you did then." I don't think these men are trying to flatter me; they speak in a surprised way, just as though they meant it, and I think they do. I never felt better, stronger or more full of vigor than at present, and I don't expect to look so very much older in 10 or 15 years more. I expect "to realize on my early investment of good sense in spending the years of young manhood in a right way." I have always lived a temperate, regular life, free from every form of dissipation, and kept my mind in a quiet, cheerful, hopeful state. Nothing can pay a man better, at any time of life, than taking good care of himself. A bicycle, a horse, a threshing machine, a steam engine, a man, how long do they last, if neglected or misused. Take good care of them.

Just a word more: Some may think I have inherited my health and strength. Not so; the opposite is true. As a child I was far from strong. The first 20 years of my life were almost a struggle for health. Only by taking the best of care of myself could I keep well; and I have sometimes thought the rigid discipline through which I passed, so thoroughly drilled me in correct methods of living that they have become fixed habits—greatly to my benefit.

BEF-KEEPERS A HIGH GRADE CLASS OF PEOPLE.

As a rule, all bee-keepers, all those worthy of the name, are an intelligent, law-abiding class, not given to the vices. There must be something about bee-keeping that appeals to a man's moral nature, and thus brings out and develops his better qualities, or else there is something about it that attracts men possessed of those higher natures—perhaps it is both.

Let me give one illustration: Years ago, when H. D. Cutting and myself went

to Detroit to make arrangements for holding the National convention, we had some difficulty in finding a hall without paying what seemed to us almost prohibitive prices; At last we found a hall on Michigan avenue, up in the third story, the price of which seemed within our means—in fact, considering what was asked for other halls, we were not a little at a loss to know why the price was so low, but we asked no questions. After the convention was over and I went to settle the bill for the hall, the size of the price was no longer an enigma. The owner kept a saloon in the lower story under the hall, and, as I paid him, he remarked: "You bee-keepers are a queer set. Only one man has been in here and all he bought was a glass of beer. If I had known what kind of a crowd you were, you never would have got that hall for that money." Across the street from the hall, at the Antisdel house, were the headquarters for the bee-keepers. Probably 100 of them stopped there. In one corner of the office was a cigar stand, and its owner was heard to complain that "this was a queer crowd. He had sold them only three cigars and they were all to one man."

Whiskey, tobacco and profanity, do not, as a rule, pass the lips of bee-keepers. They are a clean lot of men, and I am proud of those for whose good I labor.



HIRED HELP IN THE APIARY.

By correspondence, conversation and observation I know that many bee-keepers are "keeping more bees." Right on the heels of this move will follow the question of hired help. While on the trip to California, Mr. H. H. Hyde, a bright young man from Texas, sat down beside me and said: "Mr. Hutchinson, you have been advising us to keep more bees, and that advice is all right, but how are we going to get the work done? Shall we hire it done or shall it be done on shares?" I thought I should hire it done—I didn't want any partnership. Just then Mr.

France came over and joined in the discussion. If I remember right, he would hire the help if he could work with it. He agreed with Mr. Hyde that there was nothing like self-interest to make a man do his best. The Hyde Bee Co. owns and manages 1,500 colonies of bees, keeping them in 10 different yards, and it is absolutely necessary that some one aside from the owners do part of the work. Mr. Hyde had found the most desirable plan to furnish everything necessary for running an apiary, keeping a strict account of all expenses, then after the season was over, and the expenses paid, a certain portion, say one fourth or one-third, of the balance was paid to the worker as his share. It will be seen that it is to the advantage of the worker to keep down expenses, as the greater the balance at the end of the season, the greater will be the share that comes to him.

I know one man in this state who bought 100 colonies of bees last spring for \$300, and turned them over to a young man to manage, giving him one-half the honey as his share. About 5,000 pounds of extracted honey were secured. This was a good investment for the man who bought the bees and the man who did the work was well paid for his labor—receiving pretty big wages.

Mr. Mendelson, out in California, told me that the question of getting competent help was really the most serious and perplexing problem with which he had to deal.

While this question is a serious one, it can't be settled in a bee journal any further than to say that each case must be decided on its merits—what is best for one man may not be so for the next man.

A CHEAP COVER THAT CANNOT WARP, WIND OR SPLIT.

When visiting Mr. E. B. Tyrrell, of Davison, Michigan, recently, I saw a hive cover that was quite novel, and possessed of several desirable features. First, it

was cheap; next, it would not warp nor wind, unless the hive was winding, when it would fit itself to the hive. It is made of two-ply Paroid Roofing Fabric. This material is about $\frac{1}{8}$ of an inch in thickness, black in color and almost as tough as leather. It has no tar about it—in fact, is odorless. The cost is $2\frac{1}{2}$ cts. a square foot. Enough for a hive cover will not cost over five cents. Mr. Tyrrell cuts out a piece as large as the top of the hive, and about two inches longer. To the lower side of each end, where it projects the inch beyond the hive, is nailed a $\frac{3}{8}$ square strip of wood as long as the width of the cover. These strips of wood keep the ends of the cover straight and in place. Across the top, over the cover, equally distant from each other, and from the ends of the cover, are tacked two $\frac{7}{8}$ inch square strips of wood as long as the cover is wide. These strips keep the cover out flat and straight—from sinking down or hollowing in the middle.

Mr. Tyrrell has used these covers one season in one apiary and has two faults to find with them. First, they are so light that the wind will blow them off more readily than it will a wooden cover. After the bees have glued them down they stay on all right, but at first, before they are propolised, there is need for a little weight to keep them on if much of a wind should come up. He had several blew off during the season.

The other, and more serious trouble is that, when the fabric becomes hot, as it does in the middle of a hot day, the surface peels up when it is glued fast to the hive. That is, it peels up when the cover is pulled off when stuck down with propolis. It is proposed to remedy this by pasting or gluing or "painting on" a lining of cotton cloth—perhaps enameled cloth, the same as is used so much to cover the tops of frames. I told Mr. Tyrrell that there was one more fault: "You couldn't sit down on top of a hive!" "That's all right," said Mr. Tyrrell, "I don't want any sitting down in my apiary."

The cover is removed very easily. There is no need of any prying with a knife or screw driver. No coming off with a snap on a cool day. The cover rolls back just as easily as a quilt. I must say that I was very favorably impressed with both his cover and his "dirt-cheap" bottom-board. If I were establishing an apiary, I should certainly give both of them a trial. They are a move towards cheapness, simplicity, durability and desirability. If I don't miss my guess, Mr. Tyrrell will yet make his mark in the apicultural world.

WHAT THE NATIONAL ASSOCIATION IS DOING IN COMBATING ADULTERATION.

Several years ago a suit against an adulterator of honey in Chicago was brought by the National Association. While it did not result in conviction, it certainly had a very beneficial effect. Now attention is being turned towards the prosecution of adulterators in Colorado. The Colorado bee-keepers have hustled and secured a State law, and now, with the aid of the National Association, they are going after the adulterators. General Manager France has done a lot of correspondence in the matter and while on his way home from the Los Angeles convention he stopped off at Denver and still further investigated the matter. Mr. France now sends out the following statement:

Mrs. Mary E. Wright,
Colorado Food Commissioner,
Denver, Colorado.

Dear Friend:—

Complaint came to me of adulterated honey on the market of Denver, and as it came from members of the National Bee-Keepers' Association, I, acting General Manager of said Association, have made the following investigations:

1897, April 5, Colorado State Agricultural College Chemist analyzed three samples honey purchased from Denver grocery stores, bearing Frisbee honey label. Each proved to be adulterated.

1897, May 18, samples of honey purchased from grocery shelving in Denver, bearing label of Frisbee Honey, was analyzed and found adulterated.

1899, June 27, three samples purchased by E. R. Root from Denver grocery stores carefully analyzed, each adulterated, 30 to 35 per cent foreign.

1903, Feb. 4, complaint from Colorado Bee-Keepers' Association of the same brand of goods being adulterated and sold upon Denver market, also other places. After a lengthy correspondence with both said Association and the Frisbee Honey Co., I proceeded as follows:

1903, June 26, I ordered Denver Notary Public to summon a City Food Inspector (E. George) to purchase at Thompson's Fruit Store, Denver, three (3) jars honey bearing Frisbee Honey label, J. Charles Frisbee as witness. Said samples were expressed to me by said Notary Public. They have been analyzed by reliable chemists of different states. Every sample found by each chemist to be *pure honey*.

1903, June 27, Reply from Frisbee Co., thanking me for the action I had taken, and hoped I would publish the report in each Denver paper and all the Bee papers in America, and thus put a stop to the unjust complaints about his honey. I so promised, and hereby comply with the same.

1903, July 16, I received notice that there was danger of the samples having been purposely placed there to obtain this report from, and if so I might be led into a snare.

1903, July 18, the then vice-president of the National Bee-Keepers' Association (J. U. Harris) and Colorado State Food Commissioner (Mrs. Wright) went to various Denver grocery stores and purchased samples bearing Frisbee Honey Co. label. A portion of each was saved by the Food Commissioner, and a portion of each sent me, each of which have been carefully tested and found to be adulterated.

1903, Aug. 28, Deputy State Food Commissioner and myself with witnesses purchased from four Denver grocery stores several samples bearing Frisbee Honey Co. label. A portion of each sample was saved by said Food Commissioner and the remainder of each I have had carefully analyzed. All but one sample was adulterated.

ALSO one other sample gathered at the same time, in a tumbler with metal cover, bearing a green, three-leaf clover label, from an Omaha firm. Contents proved to be *nearly all*

glucose, with a small piece of comb honey therein.

It is therefore evident said adulterated honey sold in Denver, Colorado Springs and various cities, is a direct violation of the Colorado Food Laws now existing. Said laws also define what shall be the action of the proper officers in enforcing the same. As General Manager of the National Bee-Keepers' Association, having produced the above evidence, I ask the Colorado Food Commissioner to at once take such action as is necessary to bring to justice the violators of said Colorado law.

This is a copy of same today sent to Colorado Food Commissioner. The National Association has done its duty, and now the proper officers *must* do the rest.

Total costs of above evidence about \$26 or \$27.

Yours truly,

N. E. FRANCE.

EXTRACTED

SELLING CANDIED HONEY.

A Novel and Attractive Method.

One great difficulty in selling extracted honey is its tendency to candy or granulate. This can be overcome to a great extent by the application of heat, but many producers save themselves this trouble and all of the trouble that is likely to come afterwards, by educating their customers to buy honey in the granulated form. A novel method of educating customers in this direction, one that is especially adapted to a retail grocer, is described by Mr. S. T. Pettit, in *Gleanings*. Mr. Pettit says:

During the past winter, Morley supplied a grocer in this town with some candied honey in 60-lb. tins. The grocer, according to instructions, stripped the tins from one lot and placed it in a conspicuous place in a window in his grocery, with the inscription, "Pure Clover Honey," in large letters. Well, in a short time that was gone, then another, for a brisk sale sprang up immediately. In a short time that kind of honey failed to appear in the window. A clerk said to me, "That candied honey interferes with the sale of our comb honey so much that I guess we

won't sell any more that way until we work off some of our comb."

They cut it into square and rather thin pieces so smoothly and neatly that it is a very different article from honey dug out of a pail. Then the customer wisely reasons thus: "That honey in the bottle will cost me about four cents a pound more than that lovely candied honey, and the candied honey will look so nice cut up and served in little square blocks."

Of course, some package other than the old-time tin cans will be resorted to another year.

R. F. Holterman had sold it by the barrel that way in Brantford. He simply placed in a large window, stripped the barrel off, and went ahead.

[This method of selling candied honey is excellent. I have known of the plan of stripping a barrel off from the candied mass, but so far I do not think any one has suggested the plan of stripping a tin can off from the candied honey and selling it in the stores in squares and slices. It is a good scheme, and perhaps some of our bee-keeping friends would do well to paste this in their hats until the time of selling candied honey comes around next winter.—ED.]

SELF-SPACED FRAMES.

Some of the Advantages and Disadvantages—
Especially the Latter.

More and more, as I go about the country, do I find people who are not satisfied with self-spaced frames. Not a day passes that some man says, and sometimes several men say; "I don't like those Hoffman frames and I wish I had never got them." Mr. Root's people say that their orders are largely for this style of frame. I think this is largely because the Roots have recommended this style of frame. The great bee-keeping public has confidence in the Roots, and with good reason, and when they push a thing it is usually adopted. I am sincere when I say that, in my opinion, they could do a great good if they would push the plain, all-wood frame. Bee-keepers are quite inclined to follow their leaders. If the leaders advocate the self-spaced frames, it is difficult to get the rank and file to say much against that style; but, to show how

strong an opinion there is against them, I will copy from the American Bee Journal what was said at the Los Angeles convention on this subject. The question was asked: "In producing extracted honey, has the self-spacing frame any advantage over the ordinary hanging frame?" Here is the discussion:

N. A. Kluck—Self-spacing frames have a great many advantages. There is a great deal of difference.

J. M. Hambaugh—I think I am qualified to speak of the advantages and disadvantages of self spacing frames. I have been in the business of inspecting everybody's apiaries in San Diego county, and I think we have about as great varieties as any State in the Union. If you could go with me and see the disadvantages of the different kinds of self-spacing frames, you would everlastingly place condemnation on them. If you want to examine rapidly, and get over a good deal of space in a day, you will almost curse the time you ever saw a self-spacing frame. And it is a great disadvantage when it comes to rapid handling and inspecting of frames throughout the country. If I had my way about it, I would everlastingly do away with self-spacing frames. That has been my experience, and I think that of a good many others. There may be some advantages for the time being, but wait until you want to take the frames out, and get at them rapidly. Then you will find they are a great disadvantage. With the other frames, you will find by placing your fingers right, you can lift them right out. But self-spacing frames you will have to pry out the first ones, until you can lift the frames up and get them out. Otherwise they are very hard to get out.

Mr. Abbott—How about the self-spacing hive, not a frame?

Mr. Hambaugh—I have never had any experience, if you mean hives.

Mr. Abbott—Yes, sir, I mean the body of the hives.

Mr. Williamson—All the experience I have had fails to apply when it comes to a movable frame. For rapid handling, you must have a loose-hanging frame.

Mr. Hyde—I am for a hanging frame, first, last and all the time.

Dr. Miller—There are self-spacing frames and self-spacing frames, and it does not necessarily follow because you found a hive—and you will find them—where the frames are stuck fast, that all self-spacing frames act that way. The only thing is to have a sufficiently small point of contact. Generally you have

that too large. I would like to ask Mr. Hambaugh the smallest point of contact he found between any of those frames.

Mr. Hambaugh—After they were in use a certain length of time I found all of them exceedingly hard to pry apart.

Dr. Miller—If we let any large amount of space come in contact that is bad. But did you find any of them touching at only a single point above and below?

Mr. Hambaugh—No; all touched about half way.

Dr. Miller—If there is only a single point at the top you will find those will be just a delight to handle. You will have no trouble in getting them out. The bees cannot accumulate a lot of propolis there. We ought to have—I have tried hard to get that—we ought to have a spacing-nail that would automatically go in, with a head $\frac{1}{4}$ inch thick. I cannot get them inside of that. I use a heavy common wire nail, and with a guage, drive it in so that it projects $\frac{1}{4}$ inch. A staple would answer the same thing.

Mr. Hambaugh—To one side or another, enough so that they would go past each other.

Mr. Hershisser—Just as fast as I pull these frames out of the hive I go and get a claw-hammer and pull the nails or staples out.

Dr. Miller—Anybody that does not like them—there is no law against pulling them out.

Mr. Abbott—I might say I have been using a hive for more than ten years in which the hive spaces the frames. I pronounced the Hoffman frame a humbug ten years ago, and I actually would not have one if I were manipulating it; but why one should suppose that a frame can not be spaced any other way when it can be accurately spaced with metal is beyond me. The "St. Joe" hive has frames which are spaced in that way, and you may nail your frames and not touch them for ten years, and you will have no trouble to lift any one of them out with ease. That hive has been sold for about 15 years, all over our Western country, and I have heard of no complaint of frames being stuck fast.

Mr. Hambaugh—I did run across a hive of that kind from which it was simply impossible to remove the frames. They had gotten so propolized, and we had so everlastingly much trouble trying to get those frames out and overhauling them, that the owner declared he would do away with them. If that is the "St. Joe" hive, I don't want anything to do with it.

Mr. Abbott—That is not the "St. Joe" hive.

Mr. Hyde—We once bought about 180 hives—I don't know whether they were the "St. Joe" hive or not, but when I wanted to get the frames out I had to move one at a time.

J. A. Delano—I think if we used tin right on the end of our hive where the frame is, so that we could slide our frames back and forth, then get a straight top-bar and a straight end-bar, it does not matter what width we take (and not use any spaces of any kind), we will find it will suit all localities better. In our locality, I do not think, of all the plans suggested in this discussion, that any of them would work. They will get gummed up.

Out of eight speakers only one championed the self-spacing frames, two were rather non-committal, and five very vehement in their denunciation of self-spacing. A man with any kind of an eye at all can space frames accurately enough without any self-spacing device, and when it comes to getting frames out, especially after they have been in the hive a few years and are all glued fast, there is no nuisance like a self-spacing frame, that cannot be moved either way, but must be drawn straight up—if you can ever get it loosened.

EXTRACTED HONEY.

How To Make Money In Its Production and Sale.

If there is any man in this country who has made money producing and selling extracted honey, it is J. F. McIntyre, of California. He has followed business methods; and at the Los Angeles convention he read a paper on this subject. To me it was as interesting a paper as there was read. It was brief, but to the point, and dealt with the essential features. Mr. McIntyre's paper is as follows:

To make money producing extracted honey it is necessary—

First, to produce a large quantity of high grade honey; and

Secondly, to sell it for a good price.

In starting out to accomplish these objects the first thing to be considered is

the location, or locations, as it will be necessary to keep more than one apiary if you make very much money. If you can find a good field where you can keep a number of apiaries around your home apiary without overstocking or crowding out other bee-keepers, you are fortunate. I shall not attempt to tell you where to find this "Eldorado," because every field has some drawbacks, and you might not thank me when you find them out. I will, however, name some of the things to be taken into consideration in selecting a field.

The quantity and quality of honey that can be produced, an open field, cost of transportation to market, society, healthfulness of climate, annoying insects, excessive heat in summer, or cold in winter.

Having found your "Eldorado," it is important to start with a hive that you will not regret. I have found nothing better than the 10-frame Langstroth, with an unbound zinc queen-excluder between the super and brood chamber, and a painted duck cloth under the cover. All combs in the brood-chamber should be built from full sheets of foundation.

It is also important to stock your hives with the very best stock of bees to be found in the world. I can only recommend that you buy some queens from every breeder who claims to have superior stock, and breed from that which is best.

A system of management should be adopted that will prevent excessive increase, and keep both the super and brood-chamber full of bees during the honey-flow.

Honey should not be extracted until it is ripe, otherwise it must be evaporated to prevent loss from fermentation. It requires experience to tell when honey is ripe enough to extract. In some seasons, and in damp locations, the nectar from the flowers is very thin, and the honey will often ferment after it is all sealed over; at other times, and in dry locations, it is sometimes thick enough to keep, when the bees commence to seal it over. In most locations it is about right when half sealed.

It is economy to have the best tools to work with. At my Sespe apiary, this season, my daughter Flora, 19 years old, extracted all the honey, 10 tons, as fast as a man could cart it in; but she had an 8-comb extractor driven by water-power to do it with. At an out-apiary it cost me \$3.00 per day to get the same amount of honey extracted with a 6-comb Cowan extractor. Two good honey-carts, carrying 4 supers, or 32 combs of honey, at a load, are necessary to bring the honey in

from the apiary, one cart being loaded in the apiary while the other is extracted in the honey-house.

The capping box should be large enough to hold all the cappings from one extracting, to give time for the cappings to drain dry before the apiary is ready to extract again. Bingham honey-knives, kept clean in cold water, are the best to uncap the honey until we get a power-driven machine that will uncap both sides at one operation.

I use smokers with a 4 inch fire tube.

Plenty of tank room is necessary to give the honey time to settle and become clear and sparkling before it is put into cans and barrels, and to prevent delay in extracting, by having to wait for cans or barrels to put the honey in.

Having a field and apiaries, with machinery to run them, and a good system of management, we will now consider the marketing of the crop.

If the cost of producing a pound of honey is 4 cents, it is easy to see that the man who is obliged to sell all of his honey at 4 cents will soon conclude that bees don't pay and get out of the business. To make money, he must be able to hold his honey until the market price rises, for every cent he makes is in the difference between the cost of production and the price at which he sells. Organization undoubtedly helps to hold up prices. The organization of the California National Honey-Producers' Association, together with a medium crop instead of a full crop, as was expected early in the season, has kept the honey market from going to pieces in California this year; but organized weakness is not strength—it is only a bluff. The Steel Trust has been considered a pretty strong organization, and yet it has not been able to prevent a depreciation of its stock to the extent of over \$300,000,000 in the last few months. Why has this thing happened? Too many of its members had to have money, and steel stock had to be sacrificed to get it.

When the holders of any stock or commodity are financially weak, the price of that stock or commodity is bound to fall; but when they are all strong the price is equally sure to rise.

When a large crop of honey is harvested, the bee-keepers, or a large majority of them, are financially weak, and while they are making sacrifices of their honey to get money the price is bound to rule low; but their honey, when sold, goes into the hands of strong men, and soon the price begins to rise. If you have money to live on, and no debts to pay,

just wait until it gets to the highest price, then sell.

You see how it is: Get a good location, with good working facilities, secure the best of stock, keep enough bees, have the best of hives and implements, and pay attention to the marketing—to the business features. Simple, isn't it? Then why don't you do it that way?

MASTERING MOODS.

Thousands of People, who Never Amount to
Much, Could Do the Work of Giants if
They Could Only Conquer Their Moods.

There is no magazine published in this country that I take more pleasure in recommending than I do "Success." I wish every reader of the Review was a subscriber to that journal. One of the greatest factors in a man's success is the condition of his mind. If he can keep himself cheerful, happy, hopeful, courageous, success is almost surely his. "Success" teaches how this may be done; shows how a man can master those fits of "blues" or anger, or despondency, and become master of himself. The October issue contains such an excellent article on this very subject that I take pleasure in copying it. I am sure that its perusal will help my readers, and, at the same time, give them a little insight into the character of "Success." Here is the article:

Pascal says that "the whole dignity of man is in thought," and that "his whole duty is to think correctly." This is a sweeping statement, and yet every word or act of ours is simply the expression of a thought. Unless we learn to think correctly, therefore, life must be a failure. Instead of being the dignified, happy and beautiful thing that the Creator meant it to be, it will be mean, unhappy, unlovely and unsuccessful.

The very first condition necessary to make life yield all its possibilities is health—that abounding vitality and vigor of mind and body which make living joyous—and health is dependent upon correct thought. Every function, every nerve cell, every organ in the body is

powerfully influenced by the nature of our thoughts. There is no more firmly established scientific principle than that we experience the reaction of our thoughts either in increased strength and vitality, or the opposite.

To have a perfectly healthy body, one must possess a cheerful, healthy, optimistic mind. Love, peace, joy, gladness, kindness, unselfishness, contentment, serenity—these are the mental attributes which, by bringing all the bodily functions into harmony, produce a sound, healthy body. Any one who chooses may externalize these attributes in himself by persistent correct thinking.

"I have seen gleams in the face and eyes of the man," says Carlyle, "that have let you look into a higher country." It is in that "higher country" that we must live continually if we would dominate our moods and attain that peace and serenity which insure health and happiness. It is not an easy matter to conquer wrong thinking. Captious moods, fretfulness, worry, anxiety, fear,—all the little imps of the mind that perpetually seek to draw us from the higher to the lower country can only be overcome by constant watchfulness and the greatest earnestness and persistence.

* * *

Wrong thinking is indicative of weakness; it is, indeed, a species of insanity, for a wrong thinker is continually tearing down and wrecking his own mental and physical structure. The right thinker is the only sane thinker, and he is the happiest as well as the most successful man. He knows better than to keep constantly tripping himself up with the adverse thought which produces destructive conditions.

We all know the disastrous effects of wrong thinking. We know by experience how it cripples us mentally and physically. Physicians are well aware that anger poisons the blood, and that fear, anxiety, fretting and all other inharmonious thoughts seriously interfere with the normal action of all the bodily functions. They are also alive to the fact that anxiety or apprehension of impending disaster, if of long duration, is liable to bring on paralysis. It is an established fact that a mother is not only seriously affected by her own thought, but that it affects her infant to such an extent that the same symptoms and conditions from which the mother suffers are reproduced in the body of the infant. Selfishness, jealousy and envy long indulged in tend to produce serious liver

troubles and certain forms of dyspepsia. Lack of self-control and habitual indulgence in violent passions shatter the nervous system, lessen the will power, and induce grave disorders. Worry is one of the greatest enemies of the human race; it carves its deep furrows wherever it goes; it carries gloom and unhappiness with it; it delays or prevents the processes of digestion and assimilation until the starved brain and nerve cells utter their protest in various kinds of disease, sometimes even in insanity.

Wrong thinking, whatever its nature, leaves indelible scars on mind and body alike. It affects character and material prospects equally. Every time you grumble or find fault; every time you lose your temper; every time you do a mean, contemptible thing, you suffer a loss which cannot be repaired. You lose a certain amount of power, of self-respect and of an uplifting and upbuilding character force. You are conscious of your loss, too, which tends to weaken you still further.

A business man will find that, every time he gets out of sorts, flies into a rage, or "goes all to pieces" when things go wrong, he is not only seriously injuring his health, but is also crippling his business. He is making himself repellent; he is driving away success conditions.

A man who wants to do his best must keep himself in good mental trim. If he would achieve the highest success he must be a correct thinker. He cannot think discord and bring harmonious conditions into his business. His wrong thought will honeycomb and undermine his prospects in life.

* * *

Many a once prosperous man has gone down in financial ruin because he had not learned how to control his thoughts. He gave way to the "blues," he began to worry, fret and find fault with everybody. The fault-finding habit became fixed and continued until he sank into a condition where nothing suited him and nobody could please him. His old employees left him; his customers dropped away; his business began to decline and his creditors to question his financial soundness. There was a general slump in his affairs, and he finally "went to pieces."

We can conquer our moods; we can think correctly; we can be what we will to be; we can work miracles with ourselves by the power of affirmative or creative thought; we can make ourselves magnets to attract the conditions we desire, instead of repellent forces.

"Man is so made," says Pascal, "that by dint of telling him he is a fool, he believes it; and by dint of telling himself so, he makes himself believe it." The converse is also true. Many people, by dwelling on their faults, only aggravate them. By constantly picturing them in the mind they help to fasten them more firmly. It is impossible for us to become what we wish to be while we hold the opposite thought. The only way to overcome evil conditions and to upbuild is to think constantly happy, helpful, loving optimistic thoughts.

When a doctor is called upon to prescribe for any one who has swallowed poison, he immediately administers an antidote. So, when we are suffering from wrong thinking, it is because we have been poisoned by vicious thoughts, and the only way in which we can get relief or cure ourselves is by taking an antidote in the shape of right thinking. If a lamp should explode and the oil catch fire, we would not think of trying to put out the flames by pouring on more oil. We would, instead, pour on some chemical extinguisher which would immediately put out the fire. When one is aflame with passion, or afire with hatred, jealousy or revengeful feelings, the flames will not be put out by adding more anger, more hatred, or more jealousy. A love-thought is the natural antidote to all angry, vengeful, or uncharitable emotions.

* * *

If you are morose, moody, or despondent; if you have a habit of worrying or fretting about things, or any other fault which hinders your growth or progress, think persistently of the opposite virtue and practice it until it is yours by force of habit.

When you feel unhappy and out of sorts with all the world, nothing is more certain than that nursing such feelings aggravates them. Hold just the opposite thought from that which depresses you and you will naturally reverse the mood. The imagination has great power to change an unpleasant thought or experience. When you are the victim of vicious moods, just say to yourself, "This is all unreal; it has nothing to do with my higher and better self, for the Creator never intended me to be dominated by such dark pictures." Persistently recall the most delightful pictures, the happiest days of your life. Look on some beautiful object in art or nature, or read a passage in some helpful, up-lifting book. Hold persistently in the mind such things as you have enjoyed; drive out the failure thoughts by thinking of the success-

ful things you have accomplished. Call hope to your aid, and picture a bright, successful future. Surround yourself with happy thoughts for a few minutes and you will be surprised to see how all the ghosts of blackness and gloom,—all thoughts which have worried and haunted you—have gone out of sight. They can not bear the light. Light, joy, gladness and harmony are your best protectors; discord, darkness and sickness can not exist where they are.

One of the brightest and most cheerful women I ever knew told me that she was prone to fits of depression or the "blues" but that she learned to conquer them by forcing herself to sing a bright, joyous song, or to play a lively air on the piano, whenever she felt an "attack" coming on.

Everything which depresses or arouses violent passions is a waster of mental force. Every time a wrong thought is indulged there is a waste of mental energy, of achievement-power. All wrong thinking is negative, and the mind can only create when it is positive and affirmative.

Until we can control our moods and marshal our thoughts at will, as a general marshals his army, we can never do our best work. We must master our thoughts or be their slave. No man who is at the mercy of his moods is a free man. He only is free who can rise to his dominion in spite of his mental enemies. If a man must consult his moods every morning to see whether he can do his best work or not during the day; if he must look at his mental thermometer, when he rises, to see whether his courage is rising or falling; if he says to himself, "I can do a good day's work today if the 'blues' don't strike me, if some unfortunate phase of business does not come up and disturb my equilibrium, or if I can only manage to keep my temper," he is a slave; he can not be successful or happy.

* * *

How different is the outlook of a man who feels confident every morning that he is going to do a man's work, the very best that he is capable of, during the day! How superbly he carries himself who knows that he can work out the Creator's design each day, and has no fear, no doubt, no anxiety as to what he can accomplish! He feels that he is master of himself, and knows to a certainty that no moods or conditions have power to hinder him. He has come into his dominion.

Amid the feverish rush and turmoil of modern life, the fierce competition, and the nerve-exhausting struggle for existence in which the majority are engaged, we

see here and there serene souls who impress us with a sense of power, and of calm, unhesitating assurance, and who travel toward their goal with the rhythmic majesty of the stars. They have learned how to think correctly, they have mastered the secret of successful living.

It is true that this supreme self control, which enables a man to rise to his highest power, is one of the ultimate lessons of culture, but it is the first step to great achievement and is possible to all.

Some time we shall all learn better than to harbor, even for an instant, any suicidal thought or emotion. We shall no more dream of entertaining thoughts of fear, envy, jealousy, or worrying, fretful or anxious thoughts, than we would of entertaining thieves or murderers in our homes. The time will come when intelligent people will no more indulge in fits of anger, will no more indulge in uncharitable thoughts, feelings of hatred or ill-will, or gloomy, depressing, downward-tending thoughts, than they would take poison into the system.

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To promote and protect the interests of its members.

To prevent the adulteration of honey.

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W. F. MARKS, Chapinville, N. Y.
J. M. HAMBACH, Escondido, Cal.
C. A. HATCHER, Richland Cen., Wis.
C. C. MILLER, Marengo, Ills.

Tennessee Queens



Daughters of Select Imported Italians, Select long-tongued (Moore's), and select, Straight 5-band Queens, bred $3\frac{1}{2}$ miles apart, and mated to select drones. No bees owned within $2\frac{1}{2}$ miles; none impure within 3, and but few within 5 miles. No disease. 30 years' experience. Warranted queens 60c each; tested, \$1.25 each. Discount on large orders.

Contracts with dealers a specialty. Discount after July 1st. Send for circular.

JOHN M. DAVIS, Spring Hill, Tenn.

Paper Cutter For Sale.

A man living near here, and having a small job printing office, has consolidated his office with mine, and is putting in a cylinder press. We both had a paper cutter, and, as we have no use for both of them, one will be sold at a sacrifice. Mine is a 24-inch cutter, and has a new knife for which I paid \$10.00 last spring, yet \$25.00 will take the machine. A photograph and description of the machine will be sent on application. This new man will have no connection whatever with the Review—simply with the job work. The presswork for the Review will be done on the new press.

W. Z. HUTCHINSON, Flint, Mich.

I am advertising for B. F. Stratton & Son, music dealers of New York, and taking my pay in

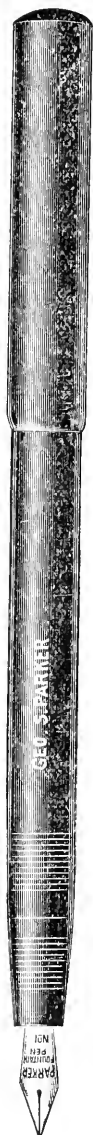
MUSICAL INSTRUMENTS.

I have already bought and paid for in this way a guitar and violin for my girls, a flute for myself, and one or two guitars for some of my subscribers. If you are thinking of buying an instrument of any kind, I should be glad to send you one on trial. If interested, write me for descriptive circular and price list, saying what kind of an instrument you are thinking of getting.

W. Z. HUTCHINSON, Flint, Mich.

Please mention the Review.

THE PARKER PEN has the "LUCKY CURVE"



The "lucky curve" is a curve in the feed-pipe that brings its inner opening out against the inside of the barrel of the pen, and this arrangement allows capillary attraction to suck the ink out of the feed-pipe when the pen end is held uppermost, thus preventing all leakage. At the same time the feed-pipe is kept moist with ink and ready for business.

There are other good features about the Parker. One is the almost impossibility of breaking the handle. If it breaks from any cause within a year a new one is sent free.

When on my way to the Los Angeles convention, I saw Mr. France using a fine fountain pen that worked nicely, and I asked him what kind it was. He said it was a "Parker," made by the Parker Pen Co., of Janesville, Wis. I tried it and was so enthusiastic in my praise, that Chas. Schneider pulled out his pen and asked me to try that. It seemed to work as well as the other and I said: "There must be other good pens as well as the Parker. It is strange that I have never been able to buy one." "Mine is a Parker, too," said Mr. Schneider.

As soon as I reached home I sent for a Parker and have been carrying and using it ever since with the greatest of satisfaction.

There are styles of pens of different prices, from \$1.50 up to \$10.00, depending mostly upon the finish of the handle. My pen cost \$2.00, and, so far as practical use is concerned, is the equal of any.

So pleased am I with this pen that I have made arrangements whereby I can send the Review one year, and one of the \$2.00 pens, for only \$2.50. Safe arrival and satisfaction guaranteed, or money will be refunded.

W. Z. HUTCHINSON,
Flint, Mich.

POULTRY NEWS.

Twenty-five cents yearly. Agents wanted. Bee department conducted by Fowler, the bee man of Ardley, N. Y. Twenty pages, illustrated and up-to-date.

10-03-1f

New Brunswick, New Jersey.

Winter Losses

Are not always the result of the same cause. They may come from starvation; from poor food; from improper preparations; from imperfect protection; from a cold, wet, or possibly, a poorly ventilated cellar, etc., etc. Successful wintering comes from a proper combination of different conditions. For clear, concise, comprehensive conclusions upon these all-important points, consult

"Advanced Bee Culture."

Five of its thirty-two chapters treat as many different phases of the wintering problem.

Price of book, 50 cts.; the REVIEW one year and the book for \$1.25. Stamps taken either U. S. or Can.

W. Z. HUTCHINSON, Flint, Mich.

Names of Bee-Keepers

TYPE WRITTEN

The names of my customers, and of those asking for sample copies, have been saved and written in a book. There are several thousand all arranged in alphabetically (in the largest States), and, although this list has been secured at an expense of hundreds of dollars, I would furnish it to advertisers or others at \$2.00 per thousand names. The former price was \$2.50 per 1000, but I now have a type writer, and by using the manifold process, I can furnish them at \$2.00. A manufacturer who wishes for a list of the names of bee-keepers in his own State only, or possibly, in the adjoining States, can be accommodated. Here is a list of the States and the number of names in each State.

Arizona 46	Ky..... 182	N. C..... 60
Ark..... 130	Kans... 350	New Mex. 56
Ala.... 80	La..... 38	Oregon . 104
Calif... 378	Mo..... 500	Ohio.... 1300
Colo.... 228	Minn... 334	Penn... 912
Canada 1200	Mich... 1770	R. I..... 46
Conn... 162	Ma s... 275	S. C..... 40
Dak.... 25	Md..... 94	Tenn.... 176
Del.... 18	Maine 270	Tex..... 270
Fla.... 100	Miss... 70	Utah.... 68
Ga..... 90	N. Y... 1700	Vt..... 200
Ind.... 744	Neb..... 345	Va..... 182
Ill.... 900	N. J... 150	W. Va.... 172
Iowa... 800	N. H. . 158	Wash.... 128
		Wis..... 625

W. Z. HUTCHINSON, Flint, Mich.

WANTED:

Extracted Amber Honey.

Mail sample and state lowest price delivered at Cincinnati. Will buy **Fancy White Comb Honey**, any quantity, but must be put up in no-drip shipping cases.

C. H. W. WEBER,
11 2146-48 Central Ave., Cincinnati, Ohio.

Please mention the Review.

WANTED!

Extracted Honey.

Mail sample and state lowest price. I also want Fancy and No. 1 comb honey, but it must be in no-drip shipping cases. I will pay spot cash.

CHAS. KOEPPEN,

10-93-tf

Fredericksburg, Va.

First Impressions

Are important factors in business. A man in a seedy or slouchy suit works at a great disadvantage. The real estate agent who shows you a house with the paint coming off, and the yard slovenly kept, has a difficult task in getting you to give its advantages their true value. You pick up a book or a magazine with a dainty, beautiful cover, and you feel, instinctively, that there must be something good inside. You receive a letter in a cheap, slovenly printed envelope, and you are prejudiced, at once, against its contents. When the envelope is first-class, neatly and appropriately printed, you are prepossessed in favor of its contents. You open the envelope. The letter head is still more beautiful. You turn to the writing—but the writer has already half gained his point. He has brought you to the reading with a favorable impression in your mind. That you may be unconscious of it, is none the less important.

The business man who neglects to have good envelopes neatly printed, is neglecting one of those little things that sometimes count for so much. They cost but little more than the ordinary kind.

I will furnish 100 envelopes, of the very finest quality, printed in the style shown upon the opposite page, and 100 sheets of letter paper to match, printed in two colors, and send them, postage paid, for only \$2.00. This will be only two cents for each letter you write, and it will be finer stationery than is often used. The Review one year, and this lot of stationery for only \$2.75. If you wish for larger quantities, there will be a reduction in price in proportion to the size of the order.

W. Z. Hutchinson, Flint, Mich.





Great Clubbing Offers.



Here is a list of magazines, together with the regular prices at which they are published:

CLASS A.

Success, - - - - -	\$1.00
Frank Leslie's Pop. Mo.	1.00
The Cosmopolitan, - -	1.00
Woman's Home Companion,	1.00
Good Housekeeping, - -	1.00
Pearson's Magazine, - -	1.00

CLASS B.

The Review of Reviews -	\$2.50
The World's Work, - -	3.00
Outing - - - - -	3.00
Country Life in America,	3.00
Lippincott's Magazine, -	2.50
The Independent, - - -	2.00
Current Literature, - -	3.00



If you subscribe for one or more of these magazines in connection with the Bee Keepers' Review, I can make the following offer:

Success, and the Bee-Keepers' Review, for only.....	\$1.75
Success, any one magazine in class A, and the Bee-Keepers' Review for only.....	2.50
Success, any two magazines in class A, and the Bee-Keepers' Review for only.....	3.00
Success, any three magazines in class A, and the Bee-Keepers' Review for only.....	3.50
Success, any one magazine in class B, and the Bee-Keepers' Review for only.....	3.50
Success, any two magazines in class B, and the Bee-Keepers' Review for only.....	5.00
Success, any three magazines in class B, and the Bee-Keepers' Review, for only.....	6.50
Success, any one magazine in class A, any one in class B, and the Bee-Keepers' Review for only.....	4.00
Success, any two magazines in class A, any one of class B, and the Bee-Keepers' Review for only.....	4.50
Success, any three magazines in class A, any one of class B, and the Bee-Keepers' Review for only.....	5.00
Success, any one magazine of class A, any two of class B, and the Bee-Keepers' Review for only.....	5.50
Success, any two magazines in class A, any two of class B, and the Bee-Keepers' Review for only.....	6.00
Success, any three magazines in class A, any two of class B, and the Bee-Keepers' Review for only.....	6.50
Success, any one magazine in class A, any three of class B, and the Bee-Keepers' Review for only.....	7.00
Success, any two magazines of class A, any three of class B, and the Bee-Keepers' Review for only.....	7.50
Success, any three magazines of class A, any three of class B, and the Bee-Keepers' Review for only.....	8.00

Magazines will be sent to one or different addresses as desired.

W. Z. HUTCHINSON, Flint, Mich.

PATENT, BINGHAM SMOKERS. 24
YEARS THE BEST. CATALOG FREE.
T. F. BINGHAM, FARWELL, MICH.

One pound, square, flint glass,

HONEY JARS

with patent, air-tight stoppers, at \$4.50 per gross.
Shipped from New York or from factory.

Send for catalogue to

J. H. M COOK, 62 Cortland St., N Y. City

A COOL MILLION

Of Snowy Wisconsin Sections, and 10,000 Bee
Hives, ready for prompt shipment. Send for
catalogue—it's free. R. H. SCHMIDT & Co.
Sheboygan, Wis.

Please mention the Review

Going to Move this Fall ?

If so, we have just a word for you. It's this: There are portions of the Southwest where it is **most** desirable to locate. We want you to make a **careful** selection — we have no land to sell, so **don't mistake our motive.**

We are interested in building up the country traversed by the Santa Fe. It will be to our mutual advantage if you locate on our line. Can we not assist you? We have illustrated descriptive literature which will gladly be sent. We have also a list of **reliable** land agents to whom we can refer you, if you wish.

If you think of making an investment in a ranch or farm, write to Address No. 1. If you wish to establish a manufacturing plant, or engage in any industry, write to Address No. 2.

No. 1.

W. J. BLACK,
Gen. Pass. Agt., A. T. & S. F. Ry.
CHICAGO.



No. 2.

WESLEY MERRITT,
Ina. Comr., A. T. & S. F. Ry.
CHICAGO.

Bee-Keepers

It is a conceded fact that the bulk of the honey of the future is going to be produced in the irrigated portion of what is known as "Arid America." If you are interested in the progress of apiculture in this vast region, you should subscribe for the

Rocky Mountain

Bee Journal,

a twenty-page monthly; price 50 cents per year.

This is now the only bee publication west of the Missouri river. We have several hundred eastern subscribers, and have still room for more. Write for free sample copy. Address

H. G. Morehouse
Boulder, Colo.

ROOT'S GOODS

At Root's Prices

Pouder's

Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

WALTER S. POWDER

512 Mass. Ave.

INDIANAPOLIS IND.

The Bee-Keepers' Paradise.

300,000 Acres of Wild Land for sale, in the famous Fruit Belt Region of Michigan, at low prices and on easy terms.

These lands are especially adapted to fruit culture, all the most desirable fruits being cultivated with especial success.

These uncultivated lands also produce immense quantities of wild berries, from which large crops of honey are obtained, at a good profit to the Bee-Keeper.

Write for particulars and circulars.

"No trouble to answer letters."

Address:

J. E. Merritt,
Gen'l. Mgr.

Michigan Land Co.,
Manistee, Mich.

Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, because it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation for cash

a specialty. BEESWAX ALWAYS WANTED at highest prices. Catalog giving

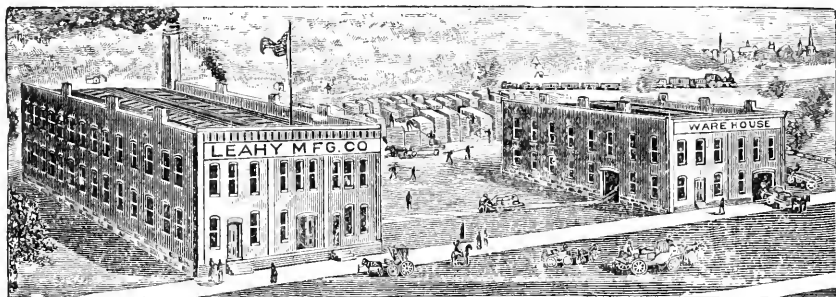
Full Line of Supplies

with prices and samples, free upon application. Beeswax wanted.

GUS DITTMER,
Augusta, Wisconsin

E. Grainger & Co., Toronto, Ontario, Sole Agents for Canada.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinned separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price; only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO., Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

Listen! Take my advice and buy your bee supplies of August Weiss; he has tons and tons of the very finest



FOUNDATION

ever made; and he sells it at prices that *defy competition!* Working wax into foundation a specialty. Wax wanted at 26 cents cash, or 28 cents in trade, delivered here. Millions of **Sections**—polished on both sides. Satisfaction guaranteed on a full line of **Supplies**. Send for catalogue and be your own judge. **AUG. WEISS,** Greenville, Wisconsin.

If the REVIEW

Is mentioned when answering an advertisement in its columns a favor is conferred upon both the publisher and the advertiser. It helps the former by raising his journal in the estimation of the advertiser; and it enables the latter to decide as to which advertising mediums are most profitable. If you would help the Review, be sure and say "I saw your advertisement in the Review," when writing to advertisers.

Bee-Keepers

Save money by buying hives, sections, brood frames, extractors, smokers and everything else you need of the

W. T. Falconer Mfg. Co.,

JAMESTOWN, N. Y.

Our goods are guaranteed of superior quality in every way. Send for our large illustrated catalog and copy of The American Bee-Keeper, a monthly for all bee-keepers; 50c a year, (now in 12th year; H. E. Hill editor.)

W. M. Gerrish, East Nottingham, N. H., carries a full line of our goods at catalog prices. Order of him and save freight

No Fish-Bone

Is apparent in comb honey when the Van Deusen, flat-bottom foundation is used. This style of foundation allows the making of a more uniform article, having a *very thin* base, with the surplus wax in the side-walls, where it can be utilized by the bees. Then the bees, in changing the base of the cells to the natural shape, work over the wax to a certain extent; and the result is a comb that can scarcely be distinguished from that built wholly by the bees. Being so thin, one pound will fill a large number of sections.

All the Trouble of wiring brood frames can be avoided by using the Van Deusen *wired*.

Send for circular; price list, and samples of foundation.

J. VAN DEUSEN,

SPROUT BROOK, N. Y.

Michigan Bee-Keepers, we are offering 4 per cent. off for cash orders during the month of December. We can save you freight and time on orders. Send us a list of the goods you need, and let us quote you prices. Jobbing agents for **The A. I. Root Co.** for Michigan.
M. H. HUNT & SON, Bell Branch, Mich.

6 Years

This will interest you.

DULUTH, Minn., April 24, 1903.

Please send me a box of **Yellowzones** for the enclosed \$1.00. We have used this remedy, now, for six years and have increased the scope of their use until this is about the only remedy we make use of.
(Rev.) S. C. Davis.

This I have always claimed—that the more you know of

YELLOWZONES

and the longer you use them the better you will like them. And, further—that they are *Absolutely Unequalled* as a general household remedy. Just read that testimony again. A man doesn't send his dollars time and again, year after year, for the same remedy unless he's getting *mighty good results!* You know that. 100's of substantial beekeepers have been my customers just as long as he, and their kind words and *continued patronage* tell the same story.

If you keep but One Remedy in the House it should be YELLOWZONES.

\$1.00 per Box of 150 Tablets.

Trial size 25 cents.

Your money back, and *Another Box* if not satisfied.

W. B. House, De Tour, Mich.

Please mention the Review.

THE AMERICAN BEE-KEEPER,

FALCONER, N. Y.

Is one of the leading illustrated monthlies of the world, and it is sent three years for one dollar, in advance. Sample copy free.

Honey Queens.

Laws' Improved Golden Queens, Laws' Long-Tongued Leather Colored Queens, and Laws' Holy Land Queens.

Laws' queens are doing business in every State in the Union and in many foreign countries. The demand for Laws' queens has doubled any previous season's sales.

Laws' queens and bees are putting up a large share of the honey now sold. Laws' stock is being sold for breeders all over the world. Why? Because it is the best to be had.

Remember! That I have a larger stock than ever; that I can send you a queen any month in the year and guarantee safe delivery; that I have many fine breeders on hand. Price, \$3.00 each. Tested, each, \$1.25; five for \$6.00. Prices reduced after March 15. Send for circular.

W. H. LAWS, Beeville, Texas.

WE PAY THE FREIGHT. THERE ARE FIVE CONDITIONS.

RIVER FALLS, Wis., October 16, 1903.

Freight charges cut quite a figure in the purchase of bee-hives and supplies. In view of the recent advances in prices, and as an inducement for early orders, we have decided to prepay freight to the amount of forty cents per 100 pounds on shipments requiring this amount for transportation. This will carry our goods at home prices as far south as Chicago. Our rate to Hinkley, Minn., 30 cts.; Crookston, Minn., 60 cts.; Peoria, Ill., 40 cts.; St. Louis, Mo., 42 cts.; Omaha, Neb., 53 cts.; Kansas City, 64. Our rate to St. Paul and Minneapolis is 16 cts. per 100 lbs; so a forty cent freight rate would carry our goods considerably beyond these points, in cases where they are obliged to pass through those points. We make some conditions, and we cannot allow these freight allowances unless the customer complies with our conditions, which are: 1st. Cash must accompany the order. 2nd. It must be an early order—not later than Feb. 1, 1904. 3rd. It must be at prices which we established Sept. 1st, 1903. (We send them on application.) 4th. The amount of the order must be for not less than Twenty Dollars. 5th. A copy of this ad. must accompany the order. The usual cash discounts for early orders (5 per cent for November, 4 per cent for December and 3 per cent for January) also apply. Send in your list of requirements for detailed estimates.

W. H. PUTNAM,

River Falls, Wis.

Superior Stock



For several years I have been selling a strain of bees that I have called the Superior Stock. While I often receive testimonials in regard to their superiority, it is very seldom that I publish one. Sometimes the temptation is too great to be resisted, and this seems to be one of those occasions. Here it is:—



North Kingsville, Ohio, Aug. 24, 1903.

Mr. W. Z. Hutchinson,
Flint, Mich.

Dear Sir:

The tested queen you sent me in 1900 is still prolific. Her colony and that of one of her daughters, in 1901 stored as much honey as **ten** colonies of hybrids. It was not a very good year for honey but there was plenty of room on the red clover for The Superior Stock. Hybrids gleaned a little dark honey from various sources while the Superior Stock stored white honey. The Superior Stock is rightly named.

Yours truly,
HERMANN E. CROWTHER.



Remember I guarantee safe arrival, safe introduction when directions are followed, purity of mating, and entire satisfaction to the extent that the queen may be returned any time within two years, and the money will be refunded, together with 50 cts. extra to pay for the trouble. The price of a queen alone is \$1.50, but I will send the Review one year and book your order for one of these queens to be sent next spring, for only \$2 00.

W. Z. HUTCHINSON,
Flint, Michigan.

Victor's Superior Italians

Go by Return Mail, and are Guaranteed to Give Satisfaction, or Money Refunded.

I am ready with the same old true and tried stock of Italian queens and bees as of old. My queen-mothers in yards No. 1 and 2 are serving their fourth year in that capacity, 1900-1903. Their daughters have pleased The A. I. Root Co., W. Z. Hutchinson, O. L. Hershey, G. M. Doolittle, R. F. Holtermann, F. B. Simpson, and many others prominent in apiculture. In fact, every customer has been pleased as far as I have heard. I COULD FURNISH HUNDREDS OF THE VERY STRONGEST TESTIMONIALS, but space forbids. Practically all the queens that I have sent from these yards were daughters and grand-daughters of the two "Oil Wells," as we often call them. Untested queens, \$1.00 each; select untested, \$1.25 each; tested, \$2.00; breeders, \$3.00 to \$7.00. Send for illustrated price list.

W. O. VICTOR, QUEEN SPECIALIST WHARTON, TEXAS

— If you wish the best, low-priced —

TYPE - WRITER.

Write to the editor of the Review. He has an Odell, taken in payment for advertising, and he would be pleased to send descriptive circulars or to correspond with any one thinking of buying such a machine.

Please mention the Review

— If you are going to —

BUY A BUZZ-SAW,

write to the editor of the Review. He has a new Barnes saw to sell and would be glad to make you happy by telling you the price at which he would sell it.

Please mention the Review.

Make Your Own Hives.

Bee - Keepers

Will save money by using our Foot Power Saw in making their hives, sections and boxes.

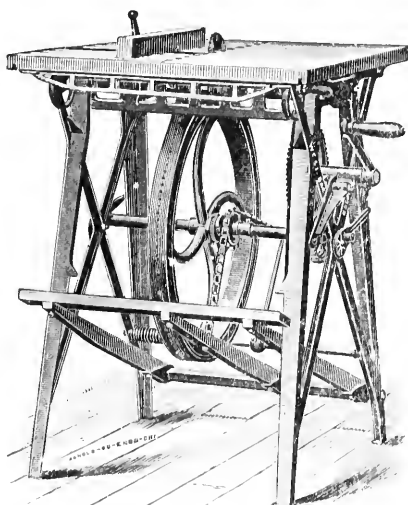
Machines on trial.
Send for Catalogue.

W. F. & JNO. BARNES CO.,

384 Ruby St.,

Rockford, Ills.

7 -02-241





THE LAST SNOW OF THE SEASON.

The photo, from which this picture was made was taken in Antrim county, Michigan, last March, by the editor of the Review, and shows very fairly the grand forests of maple with which a large portion of that county is still covered. As fast as the timber is lumbered off, red raspberries spring up in myriads, furnishing bee pasturage that is simply incomparable.

The Bee-Keepers' Review.

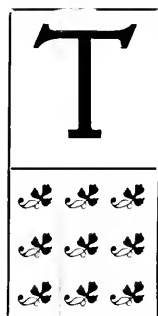
A MONTHLY JOURNAL

Devoted to the Interests of Honey Producers.

\$1.00 A YEAR.

W. Z. HUTCHINSON, Editor and Proprietor.

VOL. XVI. FLINT, MICHIGAN, DEC. 10, 1903. NO. 12.



THE THREE STAGES
OF SUCCESSFUL
BEE-KEEPING. BY
R. L. TAYLOR.



There are three stages in successful bee-keeping, initiation, expansion and fruition. Initiation is, of course, the first stage. In it

the ground work is laid, and if done thoroughly and nothing intervenes to turn the tyro aside, is a guaranty of success. In it comes, first, the puffed face, the fear of stings and the dread of opening the hive to give a colony some needed attention. At this point comes the first vital struggle. If by the exercise of courage, and the giving of every attention necessary and imagined, the dread is overcome, everything promises to go well; but if there be a failure here, if dread causes neglect at the outset, it is liable never to be overcome; and this beginner is likely to go through his bee-keeping experience believing that the moths destroy his bees, that the time to put on supers is when spring opens, and that the time to take them off is when snow flies; not knowing, till then, whether the bees have deposited any honey in them or not. In short, he will find

bee-keeping profitless, and his continuance in it is likely to be brief. But the one who conquers dread will find it the beginning of knowledge. Now the hum of the bees in their first flights in the balmy spring air, and in their gathering the early nectar from the willow and the maple, will have a charm for him that no other music ever had. Now he will give the bees no rest in his eagerness to watch the queen, and the progress of the colony. Soon he will have a yellow queen and begin practicing introducing; and then will watch anxiously for the first hatching of her progeny. After that he must rear some queens from her, and he will be found forming nuclei to secure their fertilization, and in due time will be found reclining on the green sward in front of the nuclei, watching for the queens to come out for their first flights, and waiting their return to discover evidences of their success. Then some more experience in introducing queens, and in counting the days from the egg to the emerging bee, and from the emerging bee to its demise. These are the times when, in visions of the night, he will see queens stalking about, and endless swarms passing through the air. This may be at the expense of a crop of honey, but he who has not been through all this and much more, is not likely to be successful in bee-keeping.

THE SECOND STAGE—EXPANSION.

Next comes the stage of expansion. Thoughts of the flora, the most favorable fields, of out-apiaries and carloads of honey will begin to take possession of the mind. Books and journals will be studiously conned for the latest and best methods, and devices and ideas. Most careful study will be made of hives and supers, that, if possible, he may unerringly fix upon those best suited to him and his locality. A honey house will receive due attention, and the best method of wintering for him will agitate his thoughts. The country about will be explored to discover the most convenient and promising localities for establishing apiaries. The making of hives, supers and other supplies shall he manufacture them himself, or some classes of them, and to what extent? If he has some manual skill, especially if he be without abundant means, he will, in the interest of economy, make about everything needed, except the sections. A saw-table at home will be the most convenient, but the work can be profitably done by the use of a saw at a neighboring planing mill. Prospects of large crops of honey, even a large crop already secured, will not be allowed to breed extravagance. A low grade of lumber, if it be white pine and bee-tight, is quite as good as the upper grades, barring a trifle more waste, and if used with reasonable care, will last a lifetime. Practical utility and not show will hold sway until a firm foothold in the business has been secured. Growth will be substantial rather than rapid. Labor may be cut in two by studying conveniences, so care will be exercised at every step in the position of the apiary, with reference to the honey house and the wintering repository. So far as possible, no tall or difficult trees will be allowed near the apiary, that annoyance and loss of time may be reduced to a minimum during the strenuous season of swarm-

ing. The selection and careful cultivation of a strain of bees of the highest excellence will command the best attention from the outset. The temptation which the easy methods of increase present will be firmly resisted. Some moderate rate of increase, not to exceed doubling yearly, will give the best results and doubtless more bees in the end.

THE LAST STAGE—FRUITION.

But the time for fruition comes on. The colonies have become strong and are numerous. The promise of honey producing flora is everywhere pronounced. The ring of hammer and saw is hushed and the ranks of supers filled with foundation-furnished sections are in order ready for the bees at a moment's warning; for the bee-keeper may surprise time, but he must not be surprised by it. He will have all things in readiness that when the season for surplus stock arrives he may be free to give all necessary attention to securing it. As soon as the hives are teeming with bees, and nectar is beginning to come in freely, a super will be furnished each colony, and others will be furnished as rapidly as the requirements of the colonies demand them. With these conditions and all requirements satisfied, the mass of the product will rapidly swell so that the bee-keeper himself, as he removes and stores the bright capped nectar, will feel that his cup runneth over and be satisfied. But, however beautiful, he has no thought of holding it permanently; for now, as soon as possible, he would convert it advantageously into the coin of the realm, and this is his next and final trouble. Not that it is difficult to sell it; that is easy enough, but to sell it *advantageously*.

DISPOSING OF THE CROP.

This whole subject is sometimes called commercial bee-keeping, but bee-keeping is not commercial, it is purely industrial. The disposing of the product

is purely commercial. Hence arises a difficulty. The bee-keeper, if he sells his own product, engages both in industry and trade. He must be both producer and merchant. Few men are well fitted for both occupations. One man is a born trader, and if he were engaged in bee-keeping, he would gradually work out of it, or make it a side-issue and engage in some sort of trade, most likely the honey trade, bee-keepers' supplies, and queen bees. It may be noted that farmers sell their products generally, and find little difficulty, but their wheat, corn, wool and cattle have a market price more or less stable, and the market price agrees closely in different markets, cost of transportation considered. It is different with honey. This is not sufficiently liquid, if I may use the expression, to seek its level in the markets. It is not infrequent that the price offered in one market is from 25 per cent. to 50 per cent. higher than is paid in another where the price ought to be just as high.

GRADING RULES ARE OBJECTIONABLE.

Bee-keepers are further hampered by the set of artificial and impossible rules now in vogue for the grading of honey which seem framed for the purpose of giving unfair purchasers of honey something about which they may complain with some show of reason in order to mulct the seller in a cent or two a pound, in that he claims to see stain on cappings of fancy honey, and more than the prescribed amount on grade No. 1. Strange to say, these rules entirely ignore quality; and thin honey, with an unpalatable tang, other things being equal, marches fully abreast with the rich, thick, well-ripened article. They strain at a gnat and swallow a camel. Every comb honey producer knows that not one section in a thousand can be found that will not show some stain, and that a degree of stain that does not disfigure the honey is no detriment, but rather a guaranty

of ripeness. I shall not discuss these rules here, further than to say that any set of rules made to govern the grading of comb honey ought to insist on high quality for the higher grades. Such a rule would at least have a tendency to disseminate a knowledge of the conditions necessary to the thorough ripening of honey, as well as to put honey under such conditions. I have no doubt that in the end it would increase the demand for honey and thereby increase the ease with which honey may be sold.

SHALL THE PRODUCER BECOME A DEALER?

Well, to return. We see that it is conditions and not theories that confront the bee-keeper in his endeavors to arrive at full fruition. In these conditions may be found perhaps the strongest argument in favor of organization of bee-keepers for the sale of honey and the control of the honey market. If theories could be realized such an organization could secure the grading of honey on its merits by competent men and keep the markets in different parts on something like equality. But, as things are, what shall our bee-keeper do? With his first good crop of honey, altogether without experience in selling it in quantities, and in so far as dealers in honey are concerned, alike unknowing and unknown, what is he to do? It would be very natural for him to turn for information and advice to the apicultural journals which he takes, and even personally to seek counsel and aid from their editors. Are they honest? None honest. But the more prominent ones are largely engaged, themselves, in the purchase and sale of honey, and it is a sound principle of the common law that no man may be judge in a case where his personal interests are concerned. Though one may easily, and perhaps does generally, imagine it is not so with himself, yet it remains true that

it is not in human nature to avoid being swayed by one's personal interests. It is evident that our bee-keeper must come to the conclusion that he has something yet to learn about this part of the business. If he has a natural turn for trade, he may develop that aptitude, if there are some considerable towns within reach, by selling his own honey to retailers or to both retailers and private families as well as to hotels. If he is careful to have honey of a really first-class quality, not first-class in looks only, he is liable to surprise himself with the magnitude of the trade he can build up, if he persists in working industriously in this direction for two or three years. Or he may be fortunate enough to be able to secure the services of a stirring man with a taste for trade, who can make money both for himself and his employer. Another course open to him is to cultivate an acquaintance with a number of dealers in honey who purchase their stock. In this way he will have no trouble in making sales, if the price can be agreed upon. If possible, it is better to sell on the personal inspection of the purchaser. Recourse may safely be had to commission merchants. If the bee-keeper believes in specialties, and prefers to confine himself to one business, that course may naturally be preferred. Commission merchants are not all dishonest, but care will be exercised to select only such as are proved to be reliable by a reputation founded on a long established business. It may be that not quite so much will in this way be realized from the honey, but the specialist may be able to keep enough more bees on account of the relief thus obtained, to balance the loss. And finally, if none of these methods prove permanently satisfactory, the bee-keeper may cast about to see if a combination of extensive bee-keepers of his acquaintance cannot be formed with a view to pooling issues, and selecting one of the number specially adapted to

the business to dispose of the combined product. In this way uniform grading might be secured and sales more satisfactorily made.

LAPEER, Oct. 27, 1903.

Bee-Keepers' Review

PUBLISHED MONTHLY

W. Z. HUTCHINSON, Editor and Publisher

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Flint, Michigan, Dec. 10, 1903

PACIFIC States Bee Journal, a dollar-monthly, at Tulare, California, is the latest candidate for apicultural favor.

VOTE for the amendments to the constitution of the National. They were gotten up and approved by some of the leading and most experienced men and their passage will be a benefit to the Association.

MR. C. F. SMITH, of Cheboygan, Michigan, has sent the Review a most readable article on "Upward Ventilation, Versus Sealed Covers, in Wintering Bees," and I had planned to use it in this issue, but the pictures and de-

scriptions of Northern Michigan strung out so long that they crowded it out. I shall try and give it next month.

DULLNESS, so it seems to me, is the one unpardonable sin of a bee journal. Not only should the reader find helpful instructions, but, as he reads, his enthusiasm should be kindled, his courage revived and his ambition aroused. When he lays down the paper he should feel fairly jubilant, just like getting up and going to work as he never worked before with his whole being; body, mind and soul.

THE beginning and the end of the comb honey season are critical points. To induce the bees to promptly take possession of the supers, to wind up the season with nearly all of the sections completed, yet lose none of the honey that the bees can store, are most desirable accomplishments; and Jas. A. Green, of Colorado, has sent me an article telling how all of these things may be successfully managed by what he calls his "Combination System." It will appear in an early issue of the Review.

ERNEST ROOT positively declines to be a candidate for re-election as a Director, and urges his friends to vote for Wm. McEvoy, of Woodburn, Ontario. Manager France also writes that Ontario now has over 60 members, and that Mr. McEvoy has been of great assistance in helping to settle up some Association suits over there, and he would like to see Mr. McEvoy elected. I might say that last year Mr. McEvoy received the greatest number of votes of any one who has not since been appointed as Director. Canada certainly deserves a Director, and I shall vote for Mr. McEvoy, and hope the readers of the Review will do the same.

MR. E. D. TOWNSEND, of Remus, Mich., who last year managed an apiary, 50 miles from home, with only

four visits a year, this year managed with only three visits—once to remove the winter packing and put on two upper stories of empty combs, once to extract, and once to pack the bees for winter.

He has already selected a location in Kalkaska County, Northern Michigan, where he will move an apiary in the spring, and I half suspect that this is only the beginning of a series of out-apiaries that he will eventually establish in that region.

He recently buried an apiary of 88 colonies; putting them in two pits, and the editor of the Review went up and helped him one day with the work.

By the way, Mr. Townsend expects to begin in the January Review, a series of articles on "Money in the Apiary," in which he will describe his methods particularly the short cuts.

DEPEND UPON YOUR OWN JUDGMENT.

A few times in my life I have allowed myself to be "talked over," that is, persuaded to do something against my own judgment, and I have never failed to regret it afterwards. Sometimes arguments have been used that have convinced me that I was on the wrong side of the question—that is different—but to yield to another's judgment when my own reason said "no," has always proved disastrous. I don't wish to pose as a seer, but it sometimes seems as though a man, if he gives a subject serious thought, is usually better able to decide it for himself than is anyone else. Something depends upon how a man has been "brought up," so to speak. If he has always allowed others to decide things for him, his judgment may be lacking development. It is all right to listen to the views and arguments of others, but in the end a man ought to decide for himself. Times may often come when there is no one near upon whose judgment you can depend. Learn to use your own and you will eventually find it the most handy and efficient of any for your own use.

A HEART TO HEART TALK.

To those whose subscriptions expire this month I am sending, for their convenience in renewing, an addressed envelope and an order-sheet. In addition to filling out the latter and enclosing the one dollar, I wish each subscriber would write me a heart to heart letter—write just as you would talk if we were both dangling our legs from the top of your work bench in your shop or honey house. Tell me of your bee-keeping life; when and how you began; of your successes and failures; of the numbers of colonies you are keeping and have kept; of the kinds of bees, hives and implements you are using, of the crops of honey you have produced, from what it was gathered, how and where you have marketed it, and the price secured. Tell of the greatest difficulties with which you have had to contend, and if you have overcome them and how. What are your present difficulties, and how are you working against them? What are your advantages? From what have you gained the most help in your business? Tell me of all the little helpful hints you have learned—especially those you have not seen in print.

I don't expect you to literally answer all the questions I have asked. They are given simply to indicate something of what I would like to have you write about. You may think these little things don't help any, but they do. If I could sit down and have a half-hour's chat with each subscriber, and he would tell me all he could that would be helpful to his brethren, there would be refreshing freshness about the Review. What I am asking you to do is to write just those things that you would tell me, that you think would interest me, if we should meet. If you wish to write confidentially, that confidence will be held sacred.

One thing more: Tell me what you think of the Review. Criticise it. No,

I am not fishing for compliments. If it has helped you, I wish to know *how* it has done it, that I may enlarge and encourage that feature. If there is some feature that you care little for, be equally free to mention that, as it will be equally helpful. If you find it an *absolute necessity* to have me stop sending you the Review, I wish you would tell me *why*, and tell me truly—make no excuses to spare my feelings. If it is because of some fault or shortcoming of the Review, I will be *particularly thankful* if you will frankly mention it.

I have an ambition, and perhaps you can help me to realize it. I am ambitious of being of some *real, practical* help to bee-keepers. To be sure, I expect to make some profit in publishing the Review, but I have no ambition to become *rich*, as that word is understood. I have always had a comfortable home, enough to eat, drink and wear, and more than that is only an added burden and responsibility, but as I have just said, I am possessed of an ambition to be helpful to bee-keepers all over this broad land; to bring to light and teach them better methods; to induce them to keep more bees; to lead them to organize and co-operate, in short, to make of their business a more pleasant and profitable pursuit; and I ask my subscribers to help with the work—let us work together. Write to me if you can and will, and write *freely*—no matter how long the letter, it will be read and enjoyed. Even though I may not have the time to write a reply (probably will not) it will leave an impression on my mind that will have its influence upon what goes into the Review.

The closer men can get together, the more thoroughly they become acquainted with one another, the more helpful can they be, and nothing can bring the editor and his readers nearer together than for them to write him long, friendly, chatty letters.

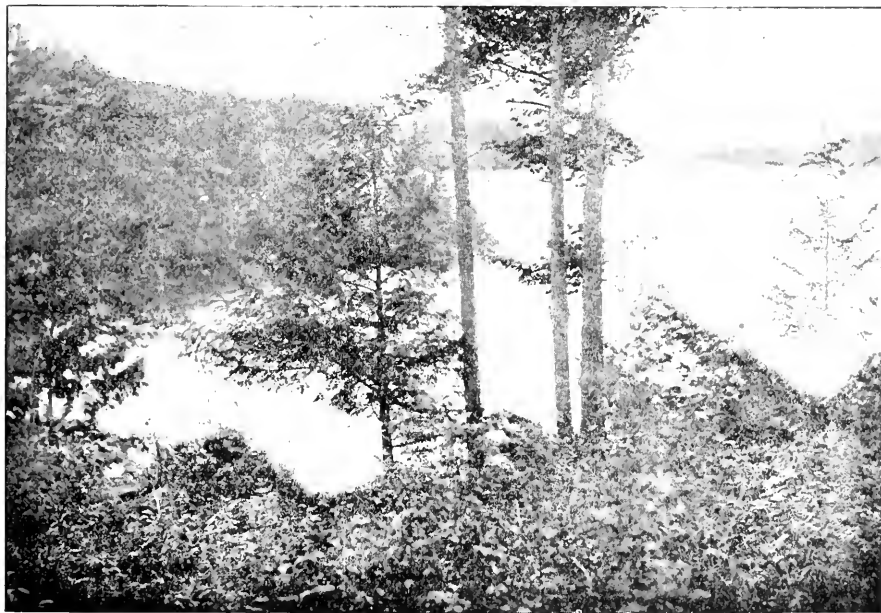
NORTHERN MICHIGAN A PARADISE FOR BEE-KEEPERS.

"Bells' ding dong,
And choral song,
Deter the bee
From industry;
But hoot of owl,
And wolf's long howl,
Incite to toil
And steady toil."

Northern Michigan, the home of the huckleberry and the speckled trout, where the wild deer drinks deep from little sparkling lakes with white, pebbly beaches, where forests of magnificent beech and maple stretch away for

miles unbroken, where still lingers some of Nature's wildness, here is proven the truthfulness of our opening adage—here is a veritable paradise for the bee-keeper. From Canada to California have we sought for the Eldorado, only to find, as is often the case, that it lies at our very door.

Three years ago I attended, at Traverse City, a meeting of the Michigan State Bee-keepers' Association, and two things struck me quite forcibly: The uniformly good yields reported,



LAKE OF THE WOODS, Antrim County, Mich.

Perhaps a few can imagine the longing there is in the heart of the editor of the Review to build himself a real log cabin, with stone fireplace and chimney, on the shore of some one of the beautiful little inland lakes of Northern Michigan, establish an apiary hard by, right in the woods, and pass at least a portion of each summer in that sylvan retreat. What a place to take bee-keeping friends in the autumn, when the evenings could be passed around a fire of blazing pine knots in the fireplace.

and the wonderful interest shown in discussing the problem of how to have populous colonies early in the season, that the best advantage might be taken of the red raspberry bloom.

THE WONDERFUL AND UNIFORM YIELDS OF NORTHERN MICHIGAN.

The next year I attended another meeting of bee-keepers held in that part of the State, only further north, at Bel-

sistently than I ever did those of any other convention. If a man that I had cornered got away, I immediately corralled another. The man who occupied the room with me at the hotel, where we stopped, was snoring when I asked my last question. Then I went home with Mr. Chapman and stayed a day or two, looked over the ground from which his honey was gathered, and listened to the ups and downs of his apicultural life.



PATCH OF MILKWEED BY THE ROADSIDE.

In some parts of Northern Michigan milkweed furnishes an abundance of pasturage. In 1902, Mr. Ira D. Bartlett secured 75 pounds per colony from milkweed alone. The plant grows freely by the roadside, in openings, and really becomes a weed in crops that cannot be cultivated—oats, for instance. It is about as difficult to eradicate as a Canada thistle. The honey is of good body, light in color and has a flavor similar to the odor from the blossom—something like vanilla.

laire, Antrim County, and again I was surprised at the uniformly good yields reported, and upon inquiry as to the source, the reply was almost invariably "raspberries." Occasionally someone would add milkweed, or basswood, or willow herb. I believe I quizzed the members of that convention more per-

Red raspberries and bees have certainly pulled his feet out of the slough of debt. I became thoroughly satisfied that this region was the best place I had yet seen for the production of honey; but I wanted to see it with my own eyes, when the harvest was in full swing, so, last July, with camera and pencil, I



MILKWEED IN FULL BLOOM.

This picture shows the blossoms about one-fourth natural size. The leaves are a deep, glossy green, while the blossoms are a lilac purple, shading off into a magenta red. Later in the season each bunch of blossoms is replaced by a seed pod nearly as large as a banana, and, attached to the seeds when ripe is some of the softest, silkiest, fluffiest, whitest, downiest substance that ever grew. Besides furnishing an abundance of honey, the blossoms also secrete a sort of glicy substance that sometimes catches a bee by the leg—usually the bee pulls away.

started in at Traverse City, and spent nearly two weeks visiting bee-keepers from there along up north until near Charlevoix.

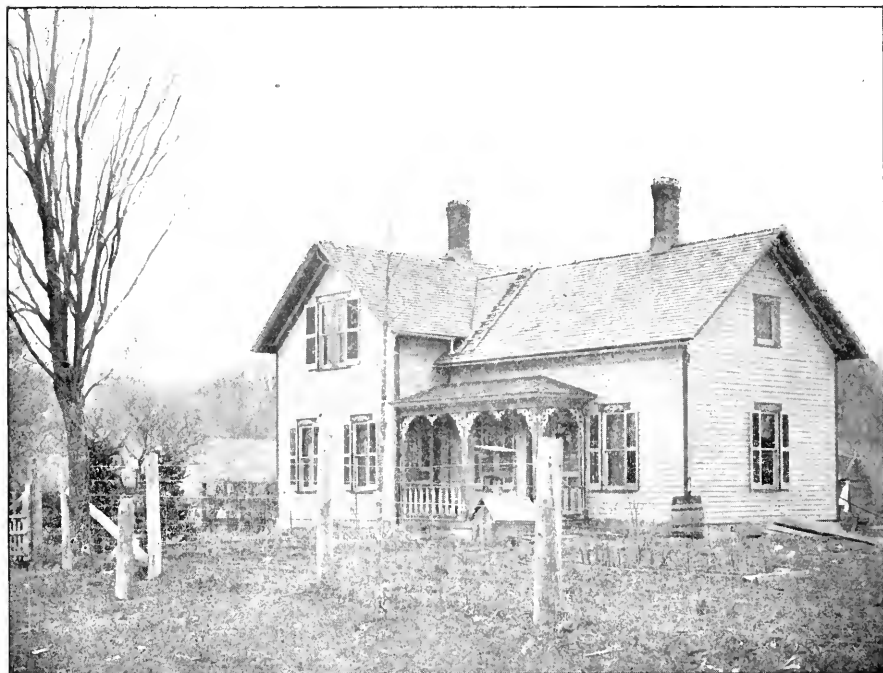
A BIT OF WILDERNESS.

I did take one little side-trip to which I would like to devote a few words. The

grand forests of white pine with which so much of this State was once clothed are now nearly extinct, and when I heard there was still a small tract in Otsego County, I thought, "There is an opportunity to get photographs of something that in a few years will be difficult to find—forests of pine in their na-

tive wildness, lifting their beautiful, plume-like tops 150 feet towards the heavens." After leaving the cars I walked five miles along a logging road, lugging my big camera with me, ate with the hands at their shanty (and it was pretty good fare, too), slept with the "boss" in his bunk, and the next morning started through the woods for a small lake, about two miles away,

the clear water- so clear that I could see the bottom at a depth that made me feel uncomfortable to think that I was over such deep water. On all sides towered the massive walls of dark green pines. The morning sun was driving away the wreaths of white mist that still lingered in their tops. Beautiful water lilies, white and yellow, in all their purity and freshness, floated in



HOME OF S. D. CHAPMAN, Mancelona, Mich.

Years ago Mr. Chapman had fine crops of honey from basswood. When this was lumbered off, there was scarcely anything left to produce honey, as the country was nearly all forest, and he seriously contemplated abandoning bee culture. Finally lumbermen began cutting off the hard timber, and this left the land so nearly unoccupied that red raspberries sprang up and changed the location to one of the best for bee keeping.

along the banks of which the men told me I would find the finest growth of pine. It had rained during the night, and my trousers and shoes were wet through long before I reached the lake

but an enthusiast does not stop for such trifles as that. I loosed the boat fastened to a stake, and floated out over

great profusion on the surface of the water. As I rounded a little point, a red deer, standing knee-deep in water, eating lily pads, gave one frightened look, three magnificent bounds, and disappeared in the pines. Over all was a stillness that could almost be felt. It seemed as though I had never been

nearer Nature's heart. The peace, the joy, the *reverence*, that came over my soul, is beyond my power to express. Yes, I got my coveted photographs, and some day I may use them in a magazine article on "The Passing of the Pine."

SOIL AND CROPS GINSENG CULTURE.

But, to return: A large portion of

cut up into furnace-wood. Some two years ago, or thereabouts, Mr. Chapman's son bought a tract of wild land just across the road from his father's, paying \$4.00 an acre for it. The timber fit for lumber had been cut. Last winter he was cutting up what was left into furnace-wood. After paying for the cutting and hauling, the timber



HOME-APIARY OF S. D. CHAPMAN, Mancelona, Mich.

Mr. Chapman winters his bees in the cellar, and this view was taken in March soon after they were set out. There were still patches of snow in the edges of the woods. From 150 colonies in 1902, Mr. Chapman secured \$1,000 worth of raspberry honey. In 1903, from 190 colonies, in two apiaries, he secured 23,000 pounds of extracted honey.

Northern Michigan, that portion I am describing, from Traverse City north to Petoskey, is hard-timber land—the grandest beeches and maples that I have ever seen—and the greater portion of the land is still uncleared. The best of the timber is being cut for lumber, when the small and crooked trees are

were netting him \$16.00 an acre. Such land is now worth about \$10.00 an acre. The soil is a sandy loam, which, aided by the cool, moist climate, produces the finest potatoes in the world. No other portion of the country is better adapted to the production of winter apples; and while I am about it, I may as well de-

scribe a somewhat novel industry that flourishes here, the raising of ginseng for market. Originally the plant grew wild, in great abundance, in these north woods, but men made a business of hunting for and digging it for the market (sometimes making \$3.00 or \$4.00 a day), until it is now very seldom that a plant is found in the woods, but I visited several gardens where it was under cultivation. The plants to start these gardens were dug up in the woods and set out. The natural home of the gin-

The sides of the enclosure are also covered similarly with lath. In short, one way of describing the shade would be to say that a huge box was made of lath placed about an inch apart, and then turned upside down over the garden. The plants are set in rows about a foot apart, in beds five feet wide and about 100 feet long, and the dark, rich green of the leaves, growing in that semi-darkness, like that of a deep woods, is something delightful to behold. The dried roots are worth about \$7 or \$8 a



APIARY OF JAS. MARTIN Rapid City, Mich

This apiary, of about 100 colonies, was built up in two years from 12 colonies, and a little over 4,000 pounds of extracted honey taken. The enthusiasm of a beginner, together with raspberry bloom, did it.

seng is in the deep woods, and in order that it may flourish under cultivation, the same conditions must be supplied. Leaf mold is brought from the woods for use in making the beds, and a shade is furnished by an immense framework six or seven feet above the ground, upheld by stout posts, and covered with lath nailed on about an inch apart.

pound, while the seeds are sold at such a fabulous price that I would rather not mention it. I was shown one bed of old plants, bearing aloft their bright green seed pods (that turn to scarlet when ripe), and told that if those roots should be dug and marketed, after the seeds had ripened, that the seeds and roots would bring \$500! Just think of

it, a piece of earth five feet wide and 100 feet long, bearing a crop worth \$500! The market for ginseng is in China, where it is regarded with a sort of superstitious reverence supposed to possess unusual curative virtues, in short, a cure-all and a charm combined. Ginseng is a perennial of slow growth; the root continuing to increase in size for several years. Making a fortune raising ginseng is rather slow at the start (it takes a year and a half for the seeds to germinate), but, if one has

for roots, and probably paid out a good share of his \$5,000 for stock.

THE RED RASPBERRY AND ITS HONEY.

But I must stop wandering and get down to business. I must take up the feature in which bee-keepers are specially interested. When this hard timber is cut off, the wild red raspberries spring up and occupy the ground, and furnish the most reliable bee pasturage there is to be found. The luxuriance of the growth is something wonderful. Many times, in riding along a woods-



APIARY AND HOME OF GEO. H. KIRKPATRICK, Rapid City, Mich.

A few years ago Mr. Kirkpatrick was making a scant living keeping bees in Indiana. A visit to Northern Michigan showed him its possibilities, and he was not slow in making the most of them. He now has a farm and the beautiful home and apiary shown above. This year his 138 colonies increased to 206 and stored about 13,000 pounds of extracted surplus honey.

the patience to wait, it is very profitable in the end. Mr. Chapman told me that he sometimes wished that he had "gone into it" years ago when he began bee-keeping, but he doubted if he should bother with it now. One man near Mr. Chapman's started two years ago, and now has gardens worth \$5,000, but he advertised and posted notices all over the country offering good prices

road, have I been able to reach out and pick the luscious ripe berries as we passed the bushes being so tall and bending with fruit. I supposed that the wild red raspberry blossomed only a week or two, and then was done, but such is not the case. It keeps in bloom fully as long as white clover. It begins the last of May or the first of June, and when I was there the latter part of July

the bees were still working upon it. If there is a drouth in August, and there are rains and warm weather in September, it sometimes blossoms again, and furnishes a second crop of honey. One bee-keeper told me that his daughter visited him the Fourth of July, and they went out and picked enough berries to have a shortcake; in September she came again, and they repeated the

operation. While the honey is not quite so white as that from clover, it is still classed as a light honey, and has a delicious raspberry flavor.

The time will probably eventually come when this country will all be cleared up and cultivated, as is the case now in the older portions of the State, but that will be many long years hence. For 20 or 25 years, it is likely



WILD RED RASPBERRY IN ALL ITS GLORY.

The timber has been lumbered off, or cut for furnace wood, and the raspberries have completely occupied the ground. This view was taken in Kalkaska County, Michigan, and there are thousands of acres in that and adjoining counties, where similar growths of berries each year "waste their sweetness on the desert air"—there are no bees there to gather the nectar,

that this portion of the State will improve as a bee-keeping country more of the timber will be cut off; and the acreage of raspberry increased. In some localities of this part of the State there is still some basswood, but it certainly will not remain there many years. The same may be said of the willow herb, or *Epilobium*. In some places milkweed furnishes a good crop of fine honey. Clover is already beginning to creep over the cleared fields.

there is a bee-keeper in this region who would not welcome other bee-keepers, and help them to find good locations, provided they came in the right spirit

willingness to go back a little farther rather than crowd some bee-keeper already located. How I should delight going into that region, buying 40 acres of land in some romantic location, clearing it up and planting it all to winter apples, and at the same time, establishing a series of out-apiaries. If I were



WILD RED RASPBERRY IN WINTER.

This view was taken in Antrim County, Michigan, the next morning after a snow storm had loaded the bushes with snow, but it shows how completely the raspberry takes possession after most of the timber has been cut off—so strong and so close together grow the plants that in many places it is with difficulty that a man can force his way through the growth.

Perhaps the bee-keepers already here will not thank me for thus exploiting their territory, they certainly would not have done so a few years ago, but bee-keepers are learning that it does not pay to crowd. Selfish motives alone prevent this. In a new country settlers are always welcome, and I doubt if

not located just as I am I certainly should do it. But my children live near me, where I can enjoy the pleasure of their company and that of the little grandchildren, and one of my sons-in-law is partner in a job printing office here that I am interested in seeing it build up and do the finest work in town,

and, above all, I think I found my life work when I began publishing the Review, and I had better keep an eye single to that service. But if I were a young man just beginning in bee-keeping, or a middle-aged man, for that matter, and trying to make a living keeping bees in a poor locality, I should certainly go to Northern Michigan. I would not do it rashly. I would not sell a good home, pack up my things, and drop down almost anywhere. I should spend a year or two in investigation, and learn from personal observation,

thing, he is very particular. The hives must all stand exactly *so*, and the covers be put on square, and so on with everything. Perhaps these things in themselves do not bring success, but the trait of character that demands them, is quite likely to command success. He has a bed, stove and dishes in the house near his apiary, and he literally lives with his bees during the working season, cooking his own meals. His father lives in town, a mile and a half away, and when it comes time to pack the bees for winter they are hauled home and



APIARY OF IRA D. BARTLETT, EAST JORDAN, MICH.

Mr. Bartlett began with a single colony, when he was only 14 years old, has steadily increased, with no winter losses, until last spring found him old enough to vote, and the possessor of an even 100 colonies, which he has this year increased to 150, and secured 4,000 pounds of comb honey, besides extracting 7,000 pounds. He dresses in white duck from head to toe, and believes that the use of this light colored clothing saves him many stings and much annoyance from the bees. A train of car was passing when this picture was being taken.

long continued, the best place to go.

In this region bees are wintered both indoors and out, but the most successful wintering that I came across was that of the bees belonging to Ira D. Bartlett, of East Jordan. It was described in the August Review, on page 243. Although Mr. Bartlett is a young man, and unmarried, he has made a wonderful success of bee-keeping. For one

packed in the boxes that stand in his father's back yard. In the spring they are unpacked and hauled out to the apiary. The reason he gives is that he wants them under his eye all the time, and where they will not be molested by prowling marauders. Mr. Bartlett's onward and upward career as a bee-keeper is one that I shall watch with pleasure.

EXTRACTED

UPWARD VENTILATION.

Some of the Reasons Why it May be Advantageous in Wintering Bees.

A few years ago there was much discussion in regard to the advisability of leaving the covers to bee hives sealed down in winter, but, if I remember right, no positive decision was reached. With a view to introducing the subject, I copy from Frank Cheshire's work his remarks on that point. He says:

I prefer *slow* upward ventilation and earnestly advocate a chaff-tray, regarding the splendid covering it affords as far more important than the hive side itself, especially if we give space above the frames, when notions of portability and cheapness may make us content with single sides, notwithstanding their inferiority to cork-packed ones. For wintering the chaff-tray should hold 4 in. or 5 in. of chaff, well patted down. The sacking should be loose, so that it may fit the hive top accurately, for small crannies allow most damaging leaks of heat. A calico first goes over the candy or section box, as previously explained, and then a thickness of flannel—but this may be omitted—and the chaff-box follows. Carpeting fits badly; if creased at all, a direct through current, which punishes the bees severely, is permitted; and on

the usual thin hive side it is hardly possible to avoid those gaps which have made many denounce all top ventilation, quite overlooking how often this has been given in a manner all must condemn.

Dampness is a great enemy to wintering bees. Prof. McLain noted the critical temperature to be less in a damp than dry air, the reason being that water has an enormous capacity for heat (specific heat), whether in the liquid or vaporous form; the latter abstracts heat from the bees, and intensifies their struggle. The water produced by the honey is thrown off in vapor, because the cluster is warm. If the hive is thin or the bees small in numbers, and, in consequence, distant from the sides, or if the top protection is scanty, the heated vapor is immediately deposited as dew and the interior of the hive is wetted. When the sides are so non-conductive that the inner faces are not below the dew point of the interior air, the hive remains dry; and since wood conducts more freely than cork-dust, the inner lining should be as thin as notions of strength will allow. In *gentle* top ventilation, the heat of the cluster just beneath the roof keeps the part in contact with the bees both warm and free from damp, and the air passes off, carrying the moisture with it. The combs below are not mildewed, nor do they run with dew. If dampness appear at all, it is behind the runners, beneath the ears, where the temperature commonly falls to the lowest point; this however, causes neither damage nor inconvenience.

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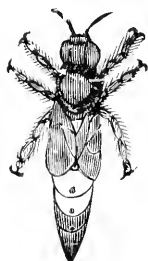
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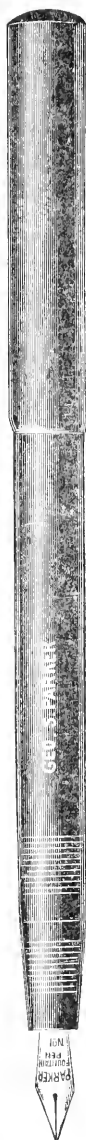
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W. Z. HUTCHINSON,
Flint, Mich.

ROOT'S GOODS

At Root's Prices

Pouder's

Honey Jars and Everything used by Bee-Keepers. Large and Complete Stock on Hand at all Times. Low Freight Rates. Prompt Service. Catalog Sent Free.

WALTER S. POWDER

512 Mass. Ave.

INDIANAPOLIS IND.

Dittmer's Foundation

Retail—Wholesale.

This foundation is made by a process that produces the superior of any. It is the cleanest and purest. It has the brightest color and sweetest odor. It is the most transparent, because it has the thinnest base. It is tough, clear as crystal, and gives more sheets to the pound than any other make.

Working wax into foundation for cash

a specialty. **BEESWAX ALWAYS WANTED** at highest prices. Catalog giving

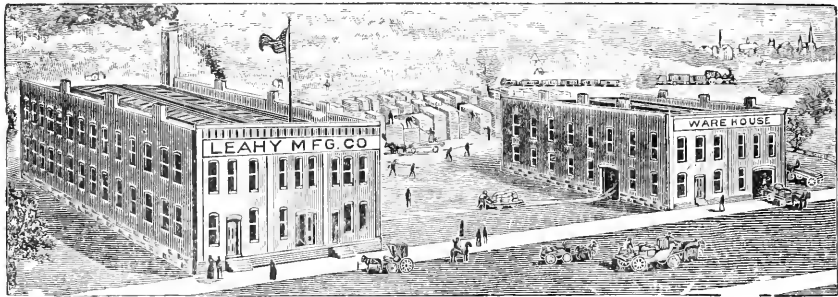
Full Line of Supplies

with prices and samples, free upon application. Beeswax wanted.

GUS DITTMER,
Augusta, Wisconsin

E. Grainger & Co., Toronto, Ontario, Sole Agents for Canada.

Many Improvements This Year.



We have made many improvements this year in the manufacture of bee-supplies. The following are some of them: Our hives are made of one grade better lumber than heretofore, and all that are sent out under our new prices will be supplied with separators and nails. The Telescopic has a new bottom board which is a combination of hive stand and bottom board, and is supplied with slatted, tinued separators. The Higginsville Smoker is much improved, larger than heretofore, and better material is used all through. Our Latest Process Foundation has no equal, and our highly polished sections are superb indeed. Send five cents for sample of these two articles, and be convinced. The Daisy Foundation Fastener—well, it is a *daisy* now, sure enough, with a pocket to catch the dripping wax, and a treadle so that it can be worked by the foot.



The Heddon Hive.

Another valuable adjunct to our manufacture is the Heddon Hive. We do not hesitate to say that it is the best all round hive ever put upon the market; and we are pleased to state that we have made arrangements with Mr. Heddon to the end that we can supply these hives; and the right to use them goes with the hives.

Honey Extractors.

Our Honey Extractors are highly ornamental, better manufactured; and, while the castings are lighter, they are more durable than heretofore, as they are made of superior material.

The Progressive Bee-Keeper.

Last, but not least, comes the Progressive Bee-Keeper, which is much improved, being brimful of good things from the pens of some of the best writers in our land, and we are now making of it more of an illustrated journal than heretofore. Price: only 50 cts. per year.

Send for a copy of our illustrated catalogue, and a sample copy of the Progressive Bee-Keeper. Address

LEAHY Mfg. CO.,

Higginsville, Mo.
East St. Louis, Ills.
Omaha, Nebraska.

JANUARY, 1903.



At Flint, Michigan—\$1.00 a Year.

ADVERTISING RATES.

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No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel-stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," "No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent. when a shipment sells for as much as one hundred dollars.

CHICAGO—We quote as follows:—Fancy white, 16c; No. 1 white, 15c; fancy amber, 13c; No. 1 amber, 12c; fancy dark, 10c; No. 1 dark, 9c; white, extracted, 7 to 8c; amber, 6 to 7c; dark 5 to 6c. Beeswax 30c.

R. A. BURNETT & Co.,
163 So. Water St., Chicago, Ills.

Jan. 7.

KANSAS CITY, MO.—The honey market is very firm, there being only a little coming in. We quote as follows:—Fancy white, 15 to 16c; No. 1 white, 14c; fancy amber, 15c; No. 1 amber, 14c; fancy dark, 13c; No. 1 dark, 12c; white, extracted, 8c; amber, 7c. Beeswax, 30.

WALKER-BREWSTER GROCER CO.,

Nov. 18. 423 Walnut St. Kansas City, Mo.

BUFFALO—We quote the Buffalo market as very moderately supplied with all kinds of honey. Strictly fancy in lightest supply and selling from 16 to 17c mostly. Lower grades, from 14 to 12c. Moderate amounts can probably be sold at these prices and we advise cleaning up. Very little demand for extracted in Buffalo. Beeswax from 25 to 33c 7s to quality.

BATTERSON & CO.

Jan. 6. 159 Michigan St. Buffalo, N. Y.

NEW YORK—Receipts of comb honey have been more liberal of late, and the demand continues good—not much call for State extracted, but low priced Southern extracted sells freely. We quote as follows:—Fancy white, 15 to 16c; No. 1 white, 14½ to 15c; fancy dark, 13 to 13½c; No. 1 dark, 12 to 13c; white extracted, 6 to 7c; amber, 4½ to 5½c; Beeswax, 27 to 28c.

FRANCIS H. LEGGETT & CO.

Nov. 19. W. Broadway, Franklin & Varick Sts.

NEW YORK—The demand for comb honey has slackened off—especially for lower grades. Extracted is in good demand. Beeswax scarce. We quote as follows:—Fancy white, 15c; No. 1 white, 14c; fancy amber, 13c; No. 1 amber, 12c; fancy dark, 11 to 12c; No. 1 dark, 11c; white extracted 7½c; amber, 6½ to 7c; dark, 5½ to 6c. Beeswax, 29 to 30c.

HILDRETH & SEGELKEN,

265 & 267 Greenwich St., Cor. Murray St.

Jan. 7. New York.

CHICAGO—The demand for comb honey since the first of the year, has been quite brisk, and we look for an active market from now on. Extracted is not moving as readily. We solicit your correspondence on the honey topic. We quote as follows:—Fancy white, 16 to 16½c; No. 1 white, 15½ to 16c; fancy amber, 14c; white extracted, 7½ to 8c; amber, 6½ to 7c.

S. T. FISH & CO.,

Jan. 7. 189 So. Water St., Chicago, Ills.

CINCINNATI—The demand for all kinds of honey has fallen off considerably in the last few weeks, owing to the many other sweets offered at this season of the year. Lower prices are no inducement to increase the consumption, as the demand is not there, and will not be until about the end of the month; consequently it is folly to offer at lower prices. We quote amber extracted in barrels at 5½ to 6½c. White clover and basswood 8 to 9½c; fancy white comb honey, 16 to 17c. Lower grades hard to sell at any price. Beeswax firm at 29 and 30c.

THE FRED W. MUTH CO.

Jan. 7. Cincinnati, Ohio.

RIPE TOMATOES

Two to four weeks before your neighbors have them. Leaflet telling how, and three packets, all different—earliest tomato seed in the market. 25 cents in stamps pay for all.

J. F. MICHAEL, Winchester, Ind.

2t R. F. D. No. 6.

DADANT'S

Foundation

By the new *Weed Process* is made in the best manner, upon the best machines, and from the best wax—that free from dirt, pollen, propolis, burnt wax, etc., that decrease its tenacity and make it offensive to the bees. Every inch of foundation is guaranteed to be equal to the sample that will be sent upon application.

Langstroth on the Honey Bee, revised, Smokers, Tin Pails, Sections and other supplies. Send for circular.

Dadant & Son,
Hamilton, Ills.

Sections

We make millions of them yearly; workmanship, smoothness and finish can't be better. The basswood grows right here. If you want some good *Shipping Cases*, you can get them of us. A full line of *Bee Supplies* on hand.

Write for illustrated catalogue and price list free.

Marshfield
Mfg. Co., *Marshfield,*
Wis.

G. B. Lewis Co.

Watertown, Wis. U. S. A.
BEE-KEEPERS' SUPPLIES.

1903 Catalog Ready.

If you have not received a copy annually, send us your name and address, and one will be mailed you *free*.

Special Offers.

On all cash orders received before April 1, 1903, we allow a discount of two per cent.

To parties sending us an order for supplies, amounting to \$10.00 or more, at regular prices, we will make the following low rates on journals: *Gleanings in Bee Culture*, six months, 50 cents; *American Bee Journal*, weekly, 70 cents.

List of agencies mailed on application.

Marketing

Of honey is fully as important as its production. To produce a crop of honey cheaply, and to sell it to the best advantage, are distinct processes.

Whether honey should be sent to a distant market, whether sold outright or on commission, whether the home market can be profitably developed, whether the bee keeper should sell the honey himself, or employ some one, the peddling of honey, etc. are all thoroughly discussed in one of the chapters of "ADVANCED BEE CULTURE." Remember, too, that this is only one chapter out of 32.

Price of the book, 50 cts.; the Review one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON, Flint, Mich.



WE BEG TO ANNOUNCE

The 1903 Edition of the A B C of Bee Culture

85th Thousand

This is a book of over 500 pages. Like some of the previous editions, it has been brought clear up to the times. Even brushed and "shook" swarms are mentioned and described under the head of "Swarming." The latest methods of bottling honey are given under the head of "Extracted Honey." A new list of honey-plants, especially those found in the South and in the far West, particularly those that are big yielders of honey, have been incorporated; and many new engravings have been inserted here and there.

If there is any particular feature in which this edition is different from all others, it is in the fact that it is written to conform to nearly every locality in the United States. When the book was put out in 1878, the instructions were intended more particularly for those who live in the North Central States. But the several trips of the reviewer over various portions of the United States from time to time have lead to some modifications here and there—particularly details of management. The subject of swarming, for instance, has been modified to fit the conditions as they exist in Texas, California and the far West, as well as the Eastern and Central States of the North. Several new articles have been inserted. Among them is one on locality. This chapter goes into detail showing how one state or province differs from another; and how methods of management must be varied to fit special conditions.

The subject of wax-presses has been thoroughly overhauled, showing rendering and pressing in the open air, in hot water, and in steam.

In the matter of wintering, again, special instructions are given for the Southern and Western bee-keeper where wintering protection is not necessary, but where there is a danger of starvation.

The biographical department has been largely revised, and new subjects have been added to take in some of those bee-keepers who have lately risen to prominence in the bee-keeping world.

The picture gallery, while it has some well known views, has a number of new ones, particularly some in the West and South.

As usual, the book has been enlarged, and, altogether, we are putting out for 1903 an edition that is new from cover to cover, or is as nearly such as it could be if it were written during the latter part of 1902 word for word, paragraph for paragraph throughout the entire book. The fact that it has been kept standing in type all these years has made it possible to make changes anywhere at any time when necessary.

Price in cloth, by mail, \$1.20, or clubbed with *Gleanings in Bee Culture* one year, both postpaid, \$1.75.

This book may be had of any dealer in bee-keepers' supplies.



The A. I. Root Co., Medina, Ohio.

FEBRUARY, 1903.



At Flint, Michigan—\$1.00 a Year.

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CHICAGO.—We quote as follows:—Fancy white, 16c; No. 1 white, 15c; fancy amber, 13c; No. 1 amber, 12c; fancy dark, 10c; No. 1 dark, 9c; white, extracted, 7 to 8c; amber, 6 to 7c; dark 5 to 6c. Beeswax 30c.

R. A. BURNETT & Co.,

Jan. 7. 163 So. Water St., Chicago, Ills.

CHICAGO.—Condition of market on comb and extracted honey remains unchanged and the demand is not very active. We quote as follows: Fancy white, 16 to 17; No. 1 white, 15 to 16; white extracted, 7 to 8; amber, 6½ to 7½.

S. T. FISH & CO.,

Feb. 5. 189 So. Water St., Chicago, Ills.

KANSAS CITY, MO.—The honey market is only steady. Wax is in good demand. We quote as follows: Fancy white, 14 to 15c; No. 1 white, 14c; fancy amber, 13c; No. 1 amber 12c; white extracted, 8c; amber 7c; beeswax 30c.

WALKER-BREWSTER GROCER CO.,

Feb. 6. 423 Walnut St. Kansas City, Mo.

BUFFALO.—We quote honey this month as somewhat more active than last. Absolutely fancy selling well at 15c; stray sales at 16c; other grades, 14 to 12c. We certainly advise cleaning up all honey now. Light demand for extracted. Beeswax 27 to 30c as to quality.

BATTERSON & CO.

Feb. 5. 159 Michigan St. Buffalo, N. Y.

NEW YORK.—Supply not large, but sufficient for the demand. Prices must be shaded considerably to force sales. Prompt sales of beeswax at present prices. We quote as follows: Fancy white 15c; No. 1 white 13 to 14c; fancy white, 13c; No. 1 dark, 12c; white extracted, 7½c; amber, 6½; beeswax 29c.

FRANCIS H. LEGGETT & CO.

Feb. 4. W. Broadway, Franklin & Varick Sts.

NEW YORK.—Demand for honey is slow for all kinds, with a sufficient supply. Beeswax scarce and wanted. We quote as follows: Fancy white, 15; No. 1 white, 13 to 14; fancy amber, 12 to 13; fancy dark, 11 to 12; white extracted, 7½; amber, 6½ to 7; dark, 6 to 6½; beeswax, 29 to 30.

HILDRETH & SEGELKEN,

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W. Z. HUTCHINSON, Flint, Mich.

NEW IDEAS

Contained in

ROOT'S CATALOG FOR 1903



THE
A. I. ROOT CO.
Medina, Ohio.

The New Danzenbaker Nail-less Cover. This is one which we believe will become very popular. It is a reversible flat cover. The *flat* cover is preferred by many large bee-keepers. It is metal-bound and already put together before leaving the factory. See catalog for illustration. This can be ordered for our regular Dovetailed hive either 8-frame or 10-frame. Investigate the merits of this cover before placing your order.

The "A" Bottom Board. This is something entirely new this season. It consists of a $2\frac{1}{2}$ -inch rim with a tilting floor-board, allowing an adjustment of depth of entrance to suit season or individual preference of user. This bottom will also be found very valuable in cellar-wintering, and for moving bees there is nothing equals it for convenience and safety. Mr. F. A. Salisbury, of Syracuse, N. Y., a bee-keeper and supply-dealer of over 25 years' experience, says: "The new style 'A' bottom can *not be beat*. We put up one, and it is *the thing*."

German Wax-press. This we've improved since a year ago, placing a heavy oak cross-arm above in place of cover-plates. We believe it is perfect in construction.

Cornell Smoker for 1903 has a new nozzle which is not inclined to topple over at the most inopportune time; this nozzle is supplied with wire-coil handle. The bellows is bound with projected metal bindings which protect the leather, strengthen the bellows-boards, prevent warping of same, and form a very convenient hold in operating the smokers. The general plan is the same as heretofore, but these added improvements make it much superior to any thing we have formerly supplied. Made in three sizes. Prices: Jumbo, \$1.25; Standard, 85c; Junior, 65c. Postage 25c extra.

Vesuvius Smoker. This is the name of the smoker we are prepared to furnish this year, which is entirely different from anything we have heretofore offered. It is breech-loading hot-blast, with removable grate attached to cover. The nozzle of this smoker is attached permanently to barrel. This has same metal binding as the new Cornell. Price \$1.00; postage 25c extra. See illustration in the catalog.

Brass Smokers. We can supply Cornell, Vesuvius and large-size Bingham smokers with brass stoves at 25c each additional.

Super Springs. The supers sent out this season will contain removable springs instead of the stationary springs as formerly supplied.

Other Goods. We are always on the lookout for improvements in bee-keepers' supplies, etc., and will introduce such as soon as we are satisfied of their superiority over the ones now in use.

Agencies carrying a stock of our hives, etc., will be supplied with these improvements in good time for this season's trade. If you are not posted as to where you can buy our supplies advantageously, write us.

Catalog. If you have not received a copy this year, we shall be pleased to mail same on receipt of your request.

MARCH, 1903



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BUFFALO.—Finest comb honey is bringing 15c very readily today. Other grades range from 14 to 12c. We advise clean up all honey now. No demand for extracted. Beeswax 25 to 30c.

BATTERSON & CO.

March 6. 159 Michigan St. Buffalo, N. Y.

KANSAS CITY, MO.—The honey market is only steady, with a liberal supply of extracted. Wax is in good demand. We quote as follows: No. 1 white, 13 to 14c; No. 1 amber, 12 to 12½c; white extracted, 7 to 7½c; amber, 6c; beeswax, 30c.

WALKER-BREWSTER GROCER CO.,

Mar. 9. 423 Walnut St. Kansas City, Mo.

CHICAGO.—Market on comb honey remains unchanged. Sales not very brisk for this time of the year. Extracted is selling more readily at quotations, and offerings exceed the demand. We quote as follows: Fancy white, 16 to 16½c; No. 1 white, 14 to 15c; white, extracted, 7½ to 8c; amber, 6½ to 7½c.

S. T. FISH & CO.,

Mar. 5. 189 So. Water St., Chicago, Ills.

NEW YORK.—The market is weak on comb honey, owing to large receipts from Cuba. Good demand for beeswax. We quote as follows: Fancy white, 14 to 15c; No. 1 white, 12 to 13c; fancy dark, 13 to 14c; No. 1 dark, 11 to 12c; white extracted, 8 to 8½c; amber, 5 to 7½c; beeswax, 30 to 32c.

FRANCIS H. LEGGETT & CO.

Mar. 4. W. Broadway, Franklin & Varick Sts.

NEW YORK.—Demand for honey is slow for all kinds, with a sufficient supply. Beeswax scarce and wanted. We quote as follows: Fancy white, 15; No. 1 white, 13 to 14; fancy amber, 12 to 13; fancy dark, 11 to 12; white extracted, 7½; amber, 6½ to 7; dark, 6 to 6½; beeswax, 30 to 31.

HILDRETH & SEGELKEN,

265 & 267 Greenwich St., Cor. Murray St.

March 5. New York.

CHICAGO.—The demand for comb honey has been, and is, of small volume. Prices are weak, concessions being made where necessary to effect sales. Fancy white comb is held at 15 to 16c; all other grades of white are irregular at 13 to 14c; light amber, 10 to 12c; dark and ambers, 9 to 10c; extracted clover and basswood, 7 to 8c; other white grades 6 to 7c; amber, 5½ to 6½c. Beeswax steady at 30 cents.

R. A. BURNETT & Co.,

March 7. 163 So. Water St., Chicago, Ills.

CINCINNATI.—The demand for all kinds of honey has fallen off considerably in the last few weeks, owing to the many other sweets offered at this season of the year. Lower prices are no inducement to increase the consumption, as the demand is not there, and will not be until about the end of the month; consequently it is folly to offer at lower prices. We quote amber extracted in barrels at 5¼ to 6½c. White clover and basswood 8 to 9½c; fancy white comb honey, 16 to 17c. Lower grades hard to sell at any price. Beeswax firm at 29 and 30c.

THE FRED W. MUTH CO.

Jan. 7. Cincinnati, Ohio.

FINE STOCK.

White and Barred Rocks, 15 eggs 75 cents, 45 eggs \$2.00.

J. F. MICHAEL, Winchester, Ind.

3-03-3t R. F. D. No. 6

DADANT'S

Foundation

By the new **Weed Process** is made in the best manner, upon the best machines, and from the best wax—that free from dirt, pollen, propolis, burnt wax, etc., that decrease its tenacity and make it offensive to the bees. Every inch of foundation is guaranteed to be equal to the sample that will be sent upon application.

Langstroth on the Honey Bee, revised, Smokers, Tin Pails, Sections and other supplies. Send for circular.

Dadant & Son,
Hamilton, Ills.

Sections

We make millions of them yearly; workmanship, smoothness and finish can't be better. The basswood grows right here. If you want some good **Shipping Cases**, you can get them of us. A full line of **Bee Supplies** on hand.

Write for illustrated catalogue and price list free.

Marshfield
Mfg. Co., *Marshfield,*
Wis.

G. B. Lewis Co.

Watertown, Wis. U. S. A.
BEE-KEEPERS' SUPPLIES.

1903 Catalog Ready.

If you have not received a copy annually, send us your name and address, and one will be mailed you **free**.

Special Offers.

On all cash orders received before April 1, 1903, we allow a discount of two per cent.

To parties sending us an order for supplies, amounting to \$10.00 or more, at regular prices, we will make the following low rates on journals: *Gleanings in Bee Culture*, semi-monthly, 50 cents; *American Bee Journal*, weekly, 70 cents.

List of agencies mailed on application.

Marketing

Of honey is fully as important as its production. To produce a crop of honey cheaply, and to sell it to the best advantage, are distinct processes.

Whether honey should be sent to a distant market, whether sold outright or on commission, whether the home market can be profitably developed, whether the bee keeper should sell the honey himself, or employ some one, the peddling of honey, etc. are all thoroughly discussed in one of the chapters of "ADVANCED BEE CULTURE." Remember, too, that this is only one chapter out of 32.

Price of the book, 50 cts.; the Review one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON, Flint, Mich.

A decorative border of stylized floral motifs surrounds the entire page content.

The Test of Time

Not only proves the increasing popularity of plain sections and fence separators, but the superiority of these supers for the production of comb honey over other styles.

The use of Root's hives with plain sections and fence separator equipment means

Larger crop,
More "Fancy" grade,
Less No. 1 and 2 grades,
Better prices,
Satisfied Merchant,
Enthusiastic Customer,
Increased sales,
Greater profit,

And a **ready market** the coming season, which is one of the important factors in the building up of a home market for honey. It is one thing to dispose of a fair grade of honey at a moderate price, but quite another to retain the good will of the merchant handling your honey. To secure his co-operation and stimulate the trade, great care should be exercised as to the attractiveness of the honey offered. It should not only be "Fancy" but the honey should be well capped and put up in neat shape. To obtain these results you should use Dovetailed hives and supers equipped with plain sections and fence separators. Insist on Root's make and you will not be disappointed.

THE A. I. ROOT CO., Medina, Ohio.

N. B. If you are not posted as to where you can buy Root's goods advantageously, write us. Ask also for catalog of Bee-keepers' supplies and specimen copy of Gleanings.

APRIL, 1903



At Flint, Michigan—\$1.00 a Year

ADVERTISING RATES.

All advertisements will be inserted at the rate of 15 cents per line, Nonpareil space, each insertion: 12 lines of Nonpareil space make 1 inch. Discounts will be given as follows:

On 10 lines and upwards, 3 times, 5 per cent; 6 times, 15 per cent; 9 times, 25 per cent; 12 times, 35 per cent.

On 20 lines and upwards, 3 times, 10 per cent; 6 times, 20 per cent; 9 times, 30 per cent; 15 times, 40 per cent.

On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

Clubbing List.

I will send the REVIEW with—

cleanings, (new).....	(\$1.00).....	\$1.75
American Bee Journal.... (new) (1.00).....	1.00.....	1.75
Canadian Bee Journal..... (1.00).....	1.00.....	1.75
Progressive Bee Keeper..... (.50).....	.50.....	1.35
American Bee Keeper..... (.50).....	.50.....	1.40
Ohio Farmer..... (1.00).....	1.00.....	1.75
Farm Journal (Phila.)..... (.50).....	.50.....	1.10
Rural New Yorker..... (1.00).....	1.00.....	1.85
The Century..... (4.00).....	4.00.....	4.50
Michigan Farmer..... (1.00).....	1.00.....	1.65
Prairie Farmer..... (1.00).....	1.00.....	1.75
American Agriculturist..... (1.00).....	1.00.....	1.75
Country Gentleman..... (2.50).....	2.50.....	3.15
Harper's Magazine..... (4.00).....	4.00.....	4.10
Harper's Weekly..... (4.00).....	4.00.....	4.20
Yonkers' Co.panion (new)..... (1.75).....	1.75.....	2.35
Cosmopolitan..... (1.00).....	1.00.....	1.90
Success..... (1.00).....	1.00.....	1.75

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to those rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent. when a shipment sells for as much as one hundred dollars.

CHICAGO.—Trade on comb honey is exceedingly dull; there is no demand, and in order to meet buyers' views, concessions in prices have to be made. Extracted is moving more readily. We quote as follows: Fancy white 15 to 16c; No. 1 white, 14 to 15c; white extracted, 6½ to 7½c.

S. T. FISH & CO.,

Apr. 2. 189 So. Water St., Chicago, Ills.

KANSAS CITY, MO.—The comb honey market is firm, and stock well cleaned up. Extracted is steady, but the demand is limited. Beeswax is in good demand. We quote as follows: Fancy white, 14c; No. 1 white, 13c; No. 1 amber, 12c; white extracted, 7c; amber, 6c. Beeswax, 30c.

WALKER-BREWSTER GROCER CO.,

April 3. 423 Walnut St. Kansas City, Mo.

BUFFALO.—Strictly fancy honey is selling very well here; in fact, better than usual at this season, mostly at 15c per pound. Other grades, however, have to be cut in price to effect sales.

We advise cleaning up all honey now quickly as possible. We do not advise shipping extracted to this market.

BATTERSON & CO.

April 2. 159 Michigan St. Buffalo, N. Y.

NEW YORK.—There is a fair demand for comb honey in small quantity, but the supply is more than sufficient. Trade on extracted honey has been good. We have many inquiries for beeswax. We quote as follows: Fancy white, 14 to 15c; No. 1 white, 12 to 14c; No. 1 amber, 11 to 12c; fancy dark, 11 to 12c; white extracted, 7½ to 8½c; amber, 6 to 7½c; beeswax 32 to 33c.

FRANCIS H. LEGGETT & CO.

Apr. 3. W. Broadway, Franklin & Varick Sts.

NEW YORK.—The market is quiet on both comb and extracted honey, with abundant supply. Beeswax is firm and wanted. We quote as follows: Fancy white, 15c; No. 1 white, 13 to 14c; fancy amber, 12c; No. 1 amber, 11c; fancy dark, 10c; white extracted, 7c; amber, 6 to 6½c; dark, 5½c; beeswax, 29 to 30c.

HILDRETH & SEGELKEN,

265 & 267 Greenwich St., Cor. Murray St.
April 3. New York.

CHICAGO.—Choice to fancy white comb honey sells in a limited way at 15 to 16c. There is no certain price for other grades, but they sell slowly at 3 to 5c less per pound. Extracted, 6 to 7c for white grades; ambers, 5½ to 6½c. Beeswax wanted at 32c per pound.

R. A. BURNETT & Co.,

April 7. 163 So. Water St., Chicago, Ills.

CINCINNATI.—The demand for all kinds of honey has fallen off considerably in the last few weeks, owing to the many other sweets offered at this season of the year. Lower prices are no inducement to increase the consumption, as the demand is not there, and will not be until about the end of the month; consequently it is folly to offer at lower prices. We quote amber extracted in barrels at 5½ to 6½c. White clover and basswood 8 to 9½c; fancy white comb honey, 16 to 17c. Lower grades hard to sell at any price. Beeswax firm at 29 and 30c.

THE FRED W. MUTH CO.

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W. Z. HUTCHINSON, Flint, Mich.

EVERYTHING FOR BEE-KEEPERS

Our catalog for this season has been fully revised. This quotes our latest prices on our full line of supplies for the apiary. It contains a vast amount of valuable information and is free for the asking. If you have not already received a copy, send to the address nearest, and by placing your order there, you will save in freight charges and secure quick delivery.

La correspondencia puede ser en Espanol.

A solicitud se envia el catalogo Espanol gratis.

THE A. I. ROOT CO.



MEDINA, . . . OHIO.

Branch Offices.

The A. I. Root Co., 10 Vine St., Phila., Pa.
The A. I. Root Co., Syracuse, N. Y.
The A. I. Root Co., Mechanic Falls, Me.
The A. I. Root Co., 1024 Miss. St., St Paul, Minnesota.
The A. I. Root Co., San Antonio, Texas.
The A. I. Root Co., 1200 Maryland Ave., S. W. Washington, D. C.
The A. I. Root Co., San Ignacio 17, Havana, Cuba

Agencies.

George W. York Co., 144 Erie St. Chicago, Montgomery Ward & Co., Michigan Ave., Chicago.
Hildreth & Segelken, 120 West Broadway, New York City.
C. H. W. Weher, 2146 Central Ave., Cincinnati, Ohio.
Rawlings Implement Co., 206 So. Charles St., Baltimore, Md.
F. H. Farmer, 182 Friend St., Boston, Mass.
Walter S. Ponder, 512 Mass. Ave., Indianapolis, Ind.
Vickery Bros., Evansville, Ind
M. H. Hunt & Son, Bell Branch, Mich.
Geo. E. Hilton, Fremont, Mich.
Jos. Nysewander, Des Moines, Iowa.
Prothero & Arnold, Du Bois, Pa.
Carl F. Buck, Augusta, Butler Co., Kans.
Griggs Bros., 214 Jackson Ave., Toledo, O.
John Nebel & Son, High Hill, Montg. Co., Missouri.
The L. A. Watkins Mdse. Co., Denver, Colo.
Delta Fruit & Produce Co., Delta, Colo.
Smith's Cash Store, San Francisco, Cal.
Lilly, Bogardus & Co., Seattle, Wash.
Portland Seed Co., Portland, Oregon.
J. B. Hamel, Cardenas, Cnba.
Hooper Bros., 66 Harbour St., Kingston, Jamaica.
Wm. Boxwell, Patricksville, Limerick, Ireland.

Local Dealers.

Besides these dealers who get carload lots there are many local dealers handling supplies for their localities who obtain their supply either at Medina or of one of the above named jobbers, as may be most convenient. These are dealers in general merchandise, or progressive bee keepers, or others interested in improved methods of bee keeping in their locality. If there is such a dealer in your vicinity, it will be to your interest to place your order with him; but be sure to insist on having Root's Goods, and do not accept inferior substitutes.

MAY, 1903



At Flint, Michigan—\$1.00 a Year

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On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

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Youths' Companion (new).....	(1.75).....	2.35
Cosmopolitan.....	(1.00).....	1.90
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No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel-stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent. when a shipment sells for as much as one hundred dollars.

NEW YORK—Trade on honey is dull and the supply plentiful. Beeswax is in good demand. We quote as follows: Fancy white, 14 to 15c; No. 1 white, 12 to 13c; fancy dark, 11 to 12c; No. 1 dark 10 to 11c; white extracted, 6½ to 8c; beeswax, 30 to 31c.

FRANCIS H. LEGGETT & CO.

May 5. W. Broadway, Franklin & Varick Sts.

CINCINNATI—Little demand for comb honey at present; fancy sells at 15 to 16c in a small way. We quote amber extracted at 5½ to 6½c; white clover, 8 to 9c. Sales not as lively as expected this season of year. Cuban extracted is offered on all sides, and future are awaited with intense interest. Beeswax strong at 30c.

THE FRED W. MUTH CO.

April 1. Cincinnati, Ohio.

KANSAS CITY, MO.—The comb honey market is firm, and stock well cleaned up. Extracted is steady, but the demand is limited. Beeswax is in good demand. We quote as follows: Fancy white, 14c; No. 1 white, 13c; No. 1 amber, 12c; white extracted, 7c; amber, 6c. Beeswax, 30c.

WALKER-BREWSTER GROCER CO.,

April 3. 423 Walnut St. Kansas City, Mo.

BUFFALO—Buffalo honey market is very quiet and there is an accumulation of grades that has to be sharply cut to sell. We quote strictly fancy comb 15 to 16c; No. 1, 14 to 15c; No. 3, etc., 9 to 12c. We think some producers missed it by holding their honey too long this season. Extracted honey 6 to 8c, with very limited demand. Beeswax 25 to 33c.

BATTERSON & CO.

May 6. 159 Michigan St. Buffalo, N. Y.

CHICAGO—The situation on comb and extracted honey remains unchanged from what we said in our last quotations. Demand for either comb or extracted is very limited and concessions will have to be made in order to effect sales. We quote as follows: Fancy white, 15 to 16c; No. 1 white, 14 to 15c; white extracted, Utah, 6 to 7c; amber, Calif., 6½ to 7½c.

S. T. FISH & CO.,

May 5. 189 So. Water St., Chicago, Ills.

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HILDRETH & SEGELKEN,

265 & 267 Greenwich St., Cor. Murray St.
April 3. New York.

CHICAGO—The past winter and present spring have been a disappointment to producers and dealers in honey, in that the consumption has been away below the average of the past decade. Choice to fancy comb is held at 15 to 16c, with off grades 2 to 5c less; extracted white, 6 to 7c; amber 6 to 6½c; dark, 5½ to 6c. Beeswax in good demand at 32c.

R. A. DUNN & CO.

May

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J. F. MICHAEL, Wincheste Ind.

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W. Z. HUTCHINSON, Flint, Mich.

Bees and Queens

IN CONNECTION with and directly adjoining our large manufacturing plant, we have a large apiary, and this is further supplemented by a yard in the West Indies, and several out-yards near Medina. Nearly all of these are devoted to the rearing of high-class honey queens or queens for business. In charge of this department we have a queen-breeder of some 15 years' experience, careful and competent, and one who uses the latest and best methods for producing vigorous and healthy stock. None but **HONEY** queens are used for breeders (usually imported—queens whose progeny have excelled every thing else in the yard). Some of them are from our celebrated imported red-clover mother, the bees of which will excel any thing else in the yard during the time that red-clover is in bloom. Then we have a breeder whose bees stored 160 lbs. of surplus from clover and basswood, in a yard where there are already 650 colonies.

On account of the intrinsic merit of breeding stock and the pains we take in rearing our queens, we are compelled to charge a slight advance over ruling prices.

PRICES OF QUEENS REARED IN THE
A. I. ROOT COMPANY'S APIARIES.

Untested queen	1.00
Select untested queen	1.25
Tested queen	2.00
Select tested queen	3.00
Breeding queen	5.00
Select breeding queens	8.00
Extra select breeding queens one year old	10.00

Imported Italian Queens.

We are prepared to furnish from the best breeders in Italy, imported Italian queens. They are put into our own yards and tested before sending out. We have only two grades—best and fair imported, and prices are given in the table below.

Best imported queens.....	\$ 5.00
Fair imported queens.....	3.00

Untested Queens.

An *intested queen* is one raised from an imported mother, or a *breeding queen* whose bees are extra honey gatherers. She is *intested* because she has laid only a frame or two of eggs; and as these eggs or brood have not hatched in, to young bees we do not know yet whether she will be a tested Italian or a hybrid. All we guarantee in an *intested queen* is, that she was raised from a pure mother and fertilized in an apiary where Italian drones largely predominate.

Select Untested Queens.

We have calls for yellow untested queens. While we do not regard them any better for real business there are some who go in for beauty. Their bees (for we dont know what they are yet) may not be any yellower then those from our ordinary untested, and may prove to be hybrids.

Tested Queens.

These are queens that have been laying for a month or so, and their young bees have already emerged from their cells. They have been in the cell long enough so that we know their progeny are pure Italians—that is, bees having three yellow bands, and, as a natural consequence, are gentle. The queens are not bright yellow, but are usually striped with yellow and black. For real business they're just as good as

Select Tested Queens.

Like the tested, their progeny is pure; but the queens themselves are large and yellow, young and prolific. Their bees are gentle and finely marked. The progeny of these queens for real business will probably be no better than those from the ordinary tested. But there are those who wish beauty and utility combined, and so far as possible, we intend to fill their want.

Imported Italian Queens.

Imported queens, as the name indicates, are queens direct from Italy. While the queens themselves are a little darker than the home-bred queens, they are prolific, and the bees are remarkable for gentleness. We charge more for the imported queens, first, because they cost more; and, second, because they are worth more. While some of them are no better than our home-bred queens, the average run of them are superior. Now, if you want a yellow queen, don't order one of these. The queens, as well as the bees, are leather-colored. Sometimes their bees, while pure, show only two bands distinctly. The third, while present, does not appear until the bees are filled with honey.

Five-banded Stock.

This is simply a fancy stock of Italian bees showing anywhere from three to five bands, from the same queen. They are not necessarily better workers, neither are they more hardy or gentle. Indeed, the reverse has often been true, because in many cases the breeder in running for color seems to lose sight of the BUSINESS qualities. But some of this yellow stock has shown all the desirable points. In offering these queens we do not guarantee that they shall show in the majority of their bees, five or even four yellow bands. We shall, however, endeavor to secure the best stock from the best and most conscientious breeders. But if you want bees for business we advise you to get the typical three-banded stock.

Price of the five-banded queens same as three-banded in the table for the grade and time of year.

Nuclei and Colonies of Bees.

We are prepared to furnish one, two, and three frame nuclei and full colonies of bees in eight-frame Dovetailed hives or Danzenbaker hives. The nuclei are put up in light shipping-boxes made of basswood, the sides of which are only 3/16 inch thick, and the ends 1/2 inch. The top and bottom are covered with wire cloth. This makes a very light package, affords plenty of ventilation, and is strong enough to stand shipping from 500 to 1000 miles. The bees so put up almost invariably go through in good order with little or no loss.

PRICES OF NUCLEI.

1-frame nucleus, no queen, ship.	weight 7lbs	\$2.00
2-frame " " "	10 "	3.00
3-frame " " "	15 "	3.50
One colony of bees in 8-frame hive, no queen, shipping weight 40 lbs		7.50

We can supply with the nuclei any of the queens mentioned in the table of prices of queens. When one buys an extra select queen or any high-priced queen he would do well to have her come in a nucleus. This will insure safe arrival, and do away with the hazard of introducing.

The A. I. Root Co., Medina, Ohio.

JUNE, 1903

APR 17 1916

Agricultural
College



At Flint, Michigan—\$1.00 a Year

ADVERTISING RATES.

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On 20 lines and upwards, 3 times, 10 per cent; 6 times, 20 per cent; 9 times, 30 per cent; 15 times, 40 per cent.

On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

Clubbing List.

I will send the REVIEW with—

Gleanings, (new).....	(\$1.00) ..	\$1.75
American Bee Journal. . . (new) ..	(1.00) ..	1.75
Canadian Bee Journal	(1.00) ..	1.75
Progressive Bee Keeper	(.50) ..	1.35
American Bee Keeper	(.50) ..	1.40
Ohio Farmer	(1.00) ..	1.75
Farin Journal (Phila.)	(.50) ..	1.10
Rural New Yorker	(1.00) ..	1.85
The Century	(4.00) ..	4.50
Michigan Farmer	(1.00) ..	1.65
Prairie Farmer	(1.00) ..	1.75
American Agriculturist.....	(1.00) ..	1.75
Country Gentleman.....	(2.50) ..	3.15
Harper's Magazine	(4.00) ..	4.10
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Cosmopolitan.....	(1.00) ..	1.90
Success,	(1.00) ..	1.75

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent. when a shipment sells for as much as one hundred dollars.

NEW YORK—Honey trade quiet; plenty of stock on hand, and very much to come forward. We quote as follows: Fancy white, 15c; No. 1 white, 10 to 12c; fancy dark, 10c; No. 1 dark, 8c; white extracted, 5 to 7c; beeswax, 31c.

FRANCIS H. LEGGETT & CO.

June 5. W. Broadway, Franklin & Varick Sts.

CINCINNATI—Very little change in market from last report. We quote amber extracted grades at 5½ to 6½c, in bbls. White clover, 8 to 9c; supply equal to demand. Comb honey 15 to 16c for fancy. Beeswax 33c.

THE FRED W. MUTH CO.

June 1. Cincinnati, Ohio.

KANSAS CITY, MO.—The comb honey market is firm, and stock well cleaned up. Extracted is steady, but the demand is limited. Beeswax is in good demand. We quote as follows: Fancy white, 14c; No. 1 white, 13c; No. 1 amber, 12c; white extracted, 7c; amber, 6c Beeswax, 30c.

WALKER-BREWSTER GROCER CO.,

April 3. 423 Walnut St. Kansas City, Mo.

BUFFALO—Too late to move honey satisfactorily now; and that here must be cut sharply to move it at all. We quote as follows: Fancy white, 14 to 15c; No. 1 white, 12 to 13c; fancy amber, 10 to 11c; No. 1 amber, 9 to 10c; fancy dark, 8 to 10c; beeswax, 25 to 33c.

BATTERSON & CO.

June 1. 159 Michigan St. Buffalo, N. Y.

CHICAGO—The situation on comb and extracted honey remains unchanged from what we said in our last quotations. Demand for either comb or extracted is very limited and concessions will have to be made in order to effect sales. We quote as follows: Fancy white, 15 to 16c; No. 1 white, 14 to 15c; white extracted, Utah, 6 to 7c; amber, Calif., 6½ to 7½c.

S. T. FISH & CO.,

May 5. 189 So. Water St., Chicago, Ills.

NEW YORK—The market is quiet on both comb and extracted honey, with abundant supply. Beeswax is firm and wanted. We quote as follows: Fancy white, 14c; No. 1 white, 13c; fancy amber, 12c; No. 1 amber, 10 to 11c; white extracted, 6½ to 7c; amber, 5½ to 6c; beeswax 30 to 31c;

HJJDRETH & SEGELKEN,

265 & 267 Greenwich St., Cor. Murray St.

June 2. New York.

CHICAGO—The past winter and present spring have been a disappointment to producers and dealers in honey, in that the consumption has been away below the average of the past decade. Choice to fancy comb is held at 15 to 16c, with off grades 2 to 5c less; extracted white, 6 to 7c; amber 6 to 6½c; dark, 5½ to 6c. Beeswax in good demand at 32c.

R. A. BURNETT & Co.,

May 7. 163 So. Water St., Chicago, Ills.

SAN FRANCISCO—The San Francisco prices on honey and beeswax have been unchanged for the last four or five months. The prospect of a good yield this year has not affected prices yet. We quote as follows: Comb honey, 10 to 13c; white extracted, 7c; amber, 6½c; dark, 5c; beeswax, 25c

ERNEST B. SCHAEFFLE,

May 11. Murphys, Calif.

Italian Queens.

Choice Golden untested, by return mail, 50c; tested, \$1.00.

J. F. MICHAEL, Winchester Ind

6-03-6t R. F. D. No. 6.

DADANT'S

Foundation

By the new *Weed Process* is made in the best manner, upon the best machines, and from the best wax—that free from dirt, pollen, propolis, burnt wax, etc., that decrease its tenacity and make it offensive to the bees. Every inch of foundation is guaranteed to be equal to the sample that will be sent upon application.

Langstroth on the Honey Bee, revised, Smokers, Tin Pails, Sections and other supplies. Send for circular.

Dadant & Son,
Hamilton, Ills.

Sections

We make millions of them yearly; workmanship, smoothness and finish can't be better. The basswood grows right here. If you want some good *Shipping Cases*, you can get them of us. A full line of *Bee Supplies* on hand.

Write for illustrated catalogue and price list free.

Marshfield
Mfg. Co., *Marshfield,*
Wis.

G. B. Lewis Co.

Watertown, Wis. U. S. A.
BEE-KEEPERS' SUPPLIES.

1903 Catalog Ready.

If you have not received a copy annually, send us your name and address, and one will be mailed you *free*.

Special Offers.

On all cash orders received before April 1, 1903, we allow a discount of two per cent.

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List of agencies mailed on application.

Marketing

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Price of the book, 50 cts.; the Review one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON, Flint, Mich.

Wax Profits

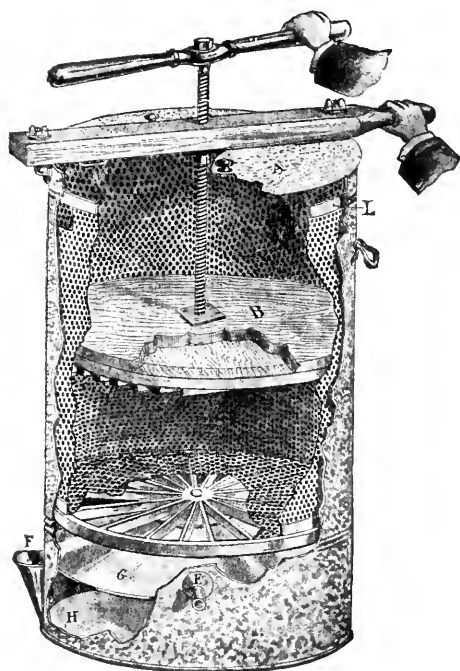


Fig. 169—The Root-German Steam Wax-press.
Price \$14.00. Shipping weight, 70 lbs

Many bee keepers allow old combs and scraps of beeswax to collect, which, for lack of time and the proper utensils, are scattered or eaten up by moth-worms. A big item would be added to the year's profits by the timely rendering of said wax by an economical process. We believe the press illustrated herewith fills a long-felt want in rendering wax. B. Walker, Clyde, Ill., says:

"Was inclined to believe at first that the German wax-press was a failure; but after a thorough trial I was well pleased. I secured 30 lbs. more wax from one day's use of the machine than I would have secured by the ordinary method of rendering."

N. E. France, Platteville, Wis., State Inspector of Apiaries, and General Manager National Beekeepers' Association, says: "The German wax-press is by far the best machine or process to save wax from old black brood-combs."

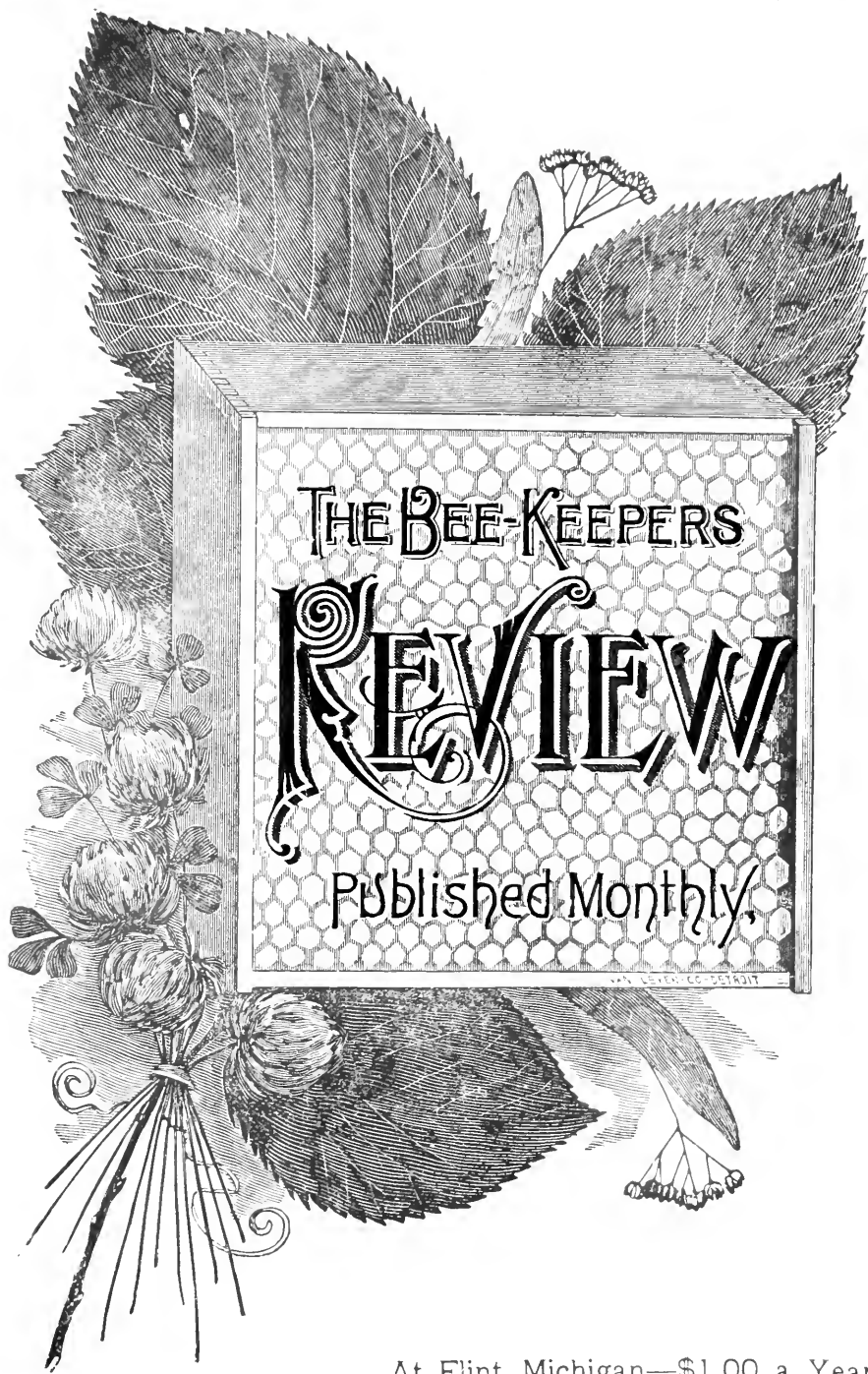


Bee-keepers, Supply Dealers and Manufacturers as well are now very busy. If you have deferred placing an order until this time, it will tend to hasten the filling of same to see that it contains nothing odd size, or irregular, and that you specify **ORIGINAL** packages. We put up hives and supers in lots of five each; frames and section-boxes in packages of 500 each; Weed New Process Foundation in boxes of 1, 2, 3, 5, 10, and 25 lbs.; shipping cases in crates of 50; glass in boxes of 50 sq. ft.; glass jars by the gross, etc. The buying of Root's Goods in original packages will prevent your being imposed upon by an unscrupulous dealer in the substitution of of something "just as good." Your supplies will be delivered in good condition, and you will have the satisfaction of knowing you have the best. Look for these brands.



THE A. I. ROOT CO., Medina, Ohio.

JULY, 1903



At Flint, Michigan—\$1.00 a Year

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On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

Clubbing List.

I will send the Review with

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Canadian Bee Journal	(1.00)	1.75
Progressive Bee Keeper	(.50)	1.35
American Bee Keeper	(.50)	1.40
Ohio Farmer	(1.00)	1.75
Kana Journal (Chula)	(.50)	1.10
Rural New Yorker	(1.00)	1.85
The Century	(4.00)	4.50
Michigan Farmer	(1.00)	1.65
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NEW YORK. Honey trade quiet; plenty of stock on hand, and very much to come forward. We quote as follows: Fancy white, 15c; No. 1 white, 10 to 12c; fancy dark, 10c; No. 1 dark, 8c; white extracted, 10 to 7c; beeswax, 31c.

FRANCIS H. LEGGETT & CO.

June 5. W. Broadway, Franklin & Varick Sts.

CHICAGO—The market is very quiet, a little extracted sells for immediate use at prices ranging from 5½ to 6½c. Comb honey is lifeless with quite a quantity on the market. Beeswax 30 to 32c.

R. A. BURNETT & Co.,

June 27. 163 So. Water St., Chicago, Ills.

CINCINNATI—Very little change in market from last report. We quote amber extracted grades at 5½ to 6½c, in bbls. White clover, 8 to 9c; supply equal to demand. Comb honey 15 to 16c for fancy. Beeswax 33c.

THE FRED W. MUTH CO.

June 1. Cincinnati, Ohio.

KANSAS CITY, MO.—Market firm. The old crop of comb honey is cleaned up. New crop coming in. It is of good quality and the demand is good. Beeswax in good demand. We quote as follows:—Fancy white, 14c; fancy amber, 12½ to 13c; white extracted, 8c; amber, 7c; Beeswax, 30c.

WALKER-BREWSTER GROCER CO.,

June 27. 423 Walnut St. Kansas City, Mo.

BUFFALO—Too late to move honey satisfactorily now; and that here must be cut sharply to move it at all. We quote as follows: Fancy white, 11 to 15c; No. 1 white, 12 to 13c; fancy amber, 10 to 11c; No. 1 amber, 9 to 10c; fancy dark, 8 to 10c; beeswax, 25 to 33c.

BATTERSON & CO.

June 1. 159 Michigan St. Buffalo, N. Y.

CHICAGO—There is practically no demand for either comb or extracted honey and it is somewhat early, as yet, to tell much about the new crop. We quote as follows:—Fancy white, 16c; No. 1 white, 15c; white extracted, 6 to 7c; amber, 5½ to 6½c; beeswax, 30 to 31c.

S. T. FISH & CO.,

June 27. 189 So. Water St., Chicago, Ills.

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HILDKETH & SEGELKEN,

265 & 267 Greenwich St., Cor. Murray St.
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J. F. MICHAEL, Winchester Ind

6-03-61 R. F. D. No. 6.

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Mfg. Co., *Marshfield,*
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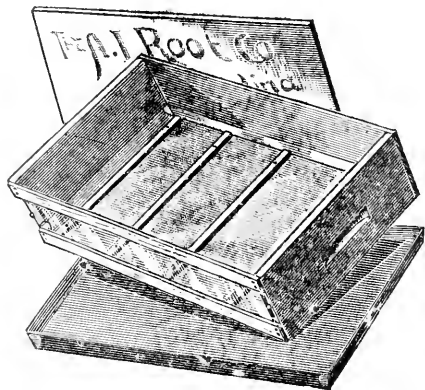
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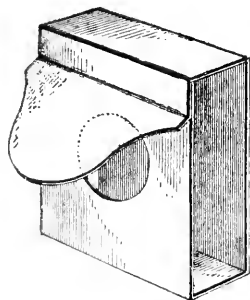
W. Z. HUTCHINSON, Flint, Mich.

DON'T RELAX YOUR EFFORTS,

After spending money for new hives and fixtures, valuable time in the preparation of these for new swarms, leaving other work at a convenient time (for the bees) to hive them; and now that a good crop is ready, the next step is **Attractive Packages**. Our assortment of packages for comb honey we believe would be difficult to improve upon for the purpose designed.



The value of attractive packages cannot be over estimated, and wide-awake bee-keepers are beginning to realize this fact. In cartons we supply two kinds, the Danzenbaker and the Folding; these are furnished for the regular sizes of sections. Both of these are furnished with special printing at a nominal charge.



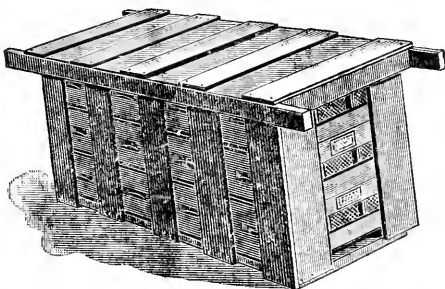
Our packages for comb honey would be incomplete without shipping crates for the shipping of non-

ey. This one shown herewith is the regular package we ship out the cases in the flat. We can furnish these in the flat for the different sizes of section cases at 60 cents each or \$5.00 for ten.

For prices on any of the above, or any other bee-keepers' supplies, address any of our agents, or

The special features of the No Drip Cases for comb honey, we have advertised for several years, are the Paper Trays and Drip Sticks which provide for the collection of leaking honey in the trays. These also prevent its oozing out at the cracks to gather dust and dirt and present a very untidy appearance, to say the least. A light frame is now used clear around the glass in front which hides any unsealed cells in the outer row, and exposes to view only the finished work in the center. The material is white basswood. The joints are perfect fitting, the work being done by machine-filed saws.

These No-Drip Cases are made in 12, 16 and 24 lb. sizes for regular $4\frac{1}{4}$ in. sections, as well as intermediate weights for plain sections. These are supplied with 2 and 3 in. glass to meet the demands of bee-keepers. The Danzenbaker and Ideal sections are also provided for with No Drip cases, but these are furnished with 3 in. glass only.



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Medina, Ohio.

AUGUST, 1903



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WALKER-BREWSTER GROCER CO.,

June 27. 423 Walnut St. Kansas City, Mo.

BUFFALO—There is a light demand for fancy one pound comb honey at about 15c; but we do not encourage large shipments at present. Old honey left over is hardly saleable at any price. Do not advise sending any old to Buffalo. Lower grades of new would probably sell from about 10 to 12c in small lots. No beeswax arriving; some fancy would sell here and is wanted.

BATTERSON & CO.

July 30. 159 Michigan St. Buffalo, N. Y.

CHICAGO—There is practically no demand for either comb or extracted honey and it is somewhat early, as yet, to tell much about the new crop. We quote as follows:—Fancy white, 16c; No. 1 white, 15c; white extracted, 6 to 7c; amber, 5½ to 6½c; beeswax, 30 to 31c.

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ERNEST B. SCHAEFFLE,

May 11. Murphys, Calif.

CHICAGO—Some consignments of the crop of 1903 are offered on this market, the comb is, in the majority of cases, No. 1 to fancy, and the quality of the very best. It is many years since this neighborhood yielded in quantity and quality as now. Demand has not come for it at the present time, but will within a short time, as it is being told that an abundant harvest of fancy honey is upon us. Prices asked are from 13 to 15 cents per lb., extracted sells slowly at 6 to 7c for fancy white; 5 to 6c for amber. Beeswax 30c.

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July 20. 163 So. Water St., Chicago, Ills.

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6-03-07 R. F. D. No. 6.

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Of honey is fully as important as its production. To produce a crop of honey cheaply, and to sell it to the best advantage, are distinct processes.

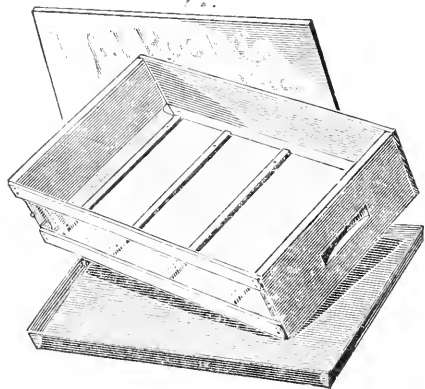
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Price of the book, 50 cts.; the Review one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON, Flint, Mich.

DON'T RELAX YOUR EFFORTS,

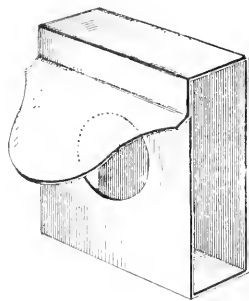
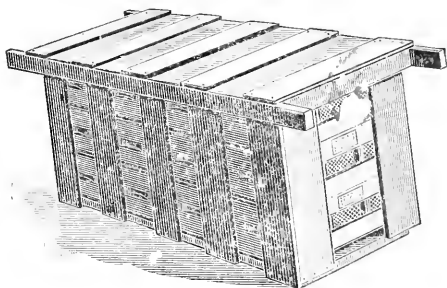
After spending money for new hives and fixtures, valuable time in the preparation of these for new swarms, leaving other work at a convenient time (for the bees) to hive them; and now that a good crop is ready, the next step is **Attractive Packages**. Our assortment of packages for comb honey we believe would be difficult to improve upon for the purpose designed.



The special features of the No Drip Cases for comb honey, we have advertised for several years, are the Paper Trays and Drip Sticks which provide for the collection of leaking honey in the trays. These also prevent its leaking out at the cracks to gather dust and dirt and prevent a very untidy appearance, to say the least. The frame is now made clear around the glass in front which hides any unsealed cells in the outer row, and exposes to view only the finished work in the center. The material is white basswood. The joints are perfect fitting, the work being done by machine-filed saws.

These No-Drip Cases are made in 12, 16 and 24 lb. sizes for regular 4 1/4 in. sections, as well as intermediate weights for plain sections. These are supplied with 2 and 3 in. glass to meet the demands of bee-keepers. The Danzenbaker and Ideal sections are also provided for with No Drip cases, but these are furnished with 3 in. glass only.

The value of attractive packages cannot be over estimated, and wide-awake bee-keepers are beginning to realize this fact. In cartons we supply two kinds, the Danzenbaker and the Folding; these are furnished for the regular sizes of sections. Both of these are furnished with special printing at a nominal charge.



Our packages for comb honey would be incomplete without shipping crates for the shipping of honey.

This one shown herewith is the regular package we ship out the cases in the flat. We can furnish these in the flat for the different sizes of section cases at 60 cents each or \$5.00 for ten.

For prices on any of the above, or any other bee-keepers' supplies, address any of our agents, or

THE A. I. ROOT CO.
Medina, Ohio.



SEPTEMBER, 1903



At Flint, Michigan—\$1.00 a Year

ADVERTISING RATES.

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On 10 lines and upwards, 3 times, 5 per cent; 6 times, 15 per cent; 9 times, 25 per cent; 12 times, 35 per cent.

On 20 lines and upwards, 3 times, 10 per cent; 6 times, 20 per cent; 9 times, 30 per cent; 15 times, 40 per cent.

On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

Clubbing List.

I will send the REVIEW with—

Cleanings, (new).....	(\$1.00).....	\$1.75
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Canadian Bee Journal.....	(1.00).....	1.75
Progressive Bee Keeper.....	(.50).....	1.35
American Bee Keeper.....	(.50).....	1.40
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Farm Journal (Phila.).....	(.50).....	1.10
Rural New Yorker.....	(1.00).....	1.85
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The following rules for grading honey were adopted by the North American Bee-keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

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In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent.; except that a few dealers charge only five per cent. when a shipment sells for as much as one hundred dollars.

KANSAS CITY, MO.—Market is firm and the demand is good. We quote as follows:—Fancy white, 12 to 12½c; No. 1 white, 12c; fancy amber, 11c; white extracted, 6c; amber, 5½c. Beeswax, 28 to 30c.

WALKER-BREWSTER GROCER CO.,

Sept. 8. 423 Walnut St. Kansas City, Mo.

NEW YORK—We quote as follows:—No. 1 white, 10 to 12c; No. 1 dark, 10c; white extracted, 7 to 8c; amber, 6 to 7c. Beeswax, 26 to 27c.

FRANCIS H. LEGGETT & CO.

Sept. 8. W. Broadway, Franklin & Varick Sts.

CINCINNATI—Very little change in market from last report. We quote amber extracted grades at 5½ to 6½c, in bbls. White clover, 8 to 9c; supply equal to demand. Comb honey 15 to 16c for fancy. Beeswax 33c.

THE FRED W. MUTH CO.

June 1.

Cincinnati, Ohio.

BUFFALO—The demand for fancy is increasing and sells fairly well as quoted. We advise moderate shipments. Old honey about unsaleable. We quote as follows:—Fancy white, 14 to 15c; No. 1 dark, 11 to 12c; No. 1, 10 to 11c; fancy dark, 9 to 10c; No. 1, 8 to 8½. Fancy beeswax, 28 to 32c.

BATTERSON & CO.

Sept. 9. 159 Michigan St. Buffalo, N. Y.

CHICAGO—During the past 10 days, we note a more active demand for comb honey and look to see trade on this commodity improve daily. We encourage letting shipments come forward now as better prices can be realized on early shipments. Extracted is in good demand. We quote as follows:—Fancy white, 14c; No. 1, 12 to 13c; fancy amber, 10 to 11c; white extracted, 6 to 7c; amber, 5 to 6c. Beeswax, 28 to 31c.

S. T. FISH & CO.,

Sept. 8. 189 So. Water St., Chicago, Ills.

NEW YORK—New crop comb honey is beginning to arrive more freely, and the demand is good for all grades. We quote fancy white, 14 to 15c; No. 1, 13c; amber, 11 to 12c; no buckwheat on the market as yet. Extracted is plentiful and in fair demand at 7c for white; 6 to 6½c for light amber; 5 to 5½c for dark. Southern in barrels at 55 to 65c per gal., according to quality. Beeswax is declining and nominal at 28 to 29c.

HILDRETH & SEGELKEN,

265 & 267 Greenwich St., Cor. Murray St.

Sept. 8. New York.

SAN FRANCISCO—The San Francisco prices on honey and beeswax have been unchanged for the last four or five months. The prospect of a good yield this year has not affected prices yet. We quote as follows: Comb honey, 10 to 13c; white extracted, 7c; amber, 6½c; dark, 5c; beeswax, 25c.

ERNEST B. SCHAEFFLE,

May 11. Murphys, Calif.

CHICAGO—Honey is coming to market quite freely and is of first quality, this fact induces the trade take it and people are of the opinion that it is going to be reasonable in price, two factors which go far toward marketing the product. Best grades of white comb sell at 14c; extracted 6½ to 7½c according to quality and package, amber grades, 5½, 6½c. Beeswax 30c.

R. A. BURNETT & Co.,

Sept. 8. 163 So. Water St., Chicago, Ills.

Italian Queens.

Choice Golden untested, by return mail, 50c; tested, \$1.00.

J. F. MICHAEL, Winchester Ind

6-03-6t

R. F. D. No. 6.

DADANT'S

Foundation

By the new *Weed Process* is made in the best manner, upon the best machines, and from the best wax—that free from dirt, pollen, propolis, burnt wax, etc., that decrease its tenacity and make it offensive to the bees. Every inch of foundation is guaranteed to be equal to the sample that will be sent upon application.

Langstroth on the Honey Bee, revised, Smokers, Tin Pails, Sections and other supplies. Send for circular.

Dadant & Son,
Hamilton, Ills.

Sections

We make millions of them yearly; workmanship, smoothness and finish can't be better. The basswood grows right here. If you want some good *Shipping Cases*, you can get them of us. A full line of *Bee Supplies* on hand.

Write for illustrated catalogue and price list free.

Marshfield
Mfg. Co., *Marshfield,*
Wis.

G. B. Lewis Co.

Watertown, Wis. U. S. A.
BEE-KEEPERS' SUPPLIES.

1903 Catalog Ready.

If you have not received a copy annually, send us your name and address, and one will be mailed you *free*.

Special Offers.

On all cash orders received before April 1, 1903, we allow a discount of two per cent.

To parties sending us an order for supplies, amounting to \$10.00 or more, at regular prices, we will make the following low rates on journals: *Gleanings in Bee Culture*, semi-monthly, 50 cents; *American Bee Journal*, weekly, 70 cents.

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Of honey is fully as important as its production. To produce a crop of honey cheaply, and to sell it to the best advantage, are distinct processes.

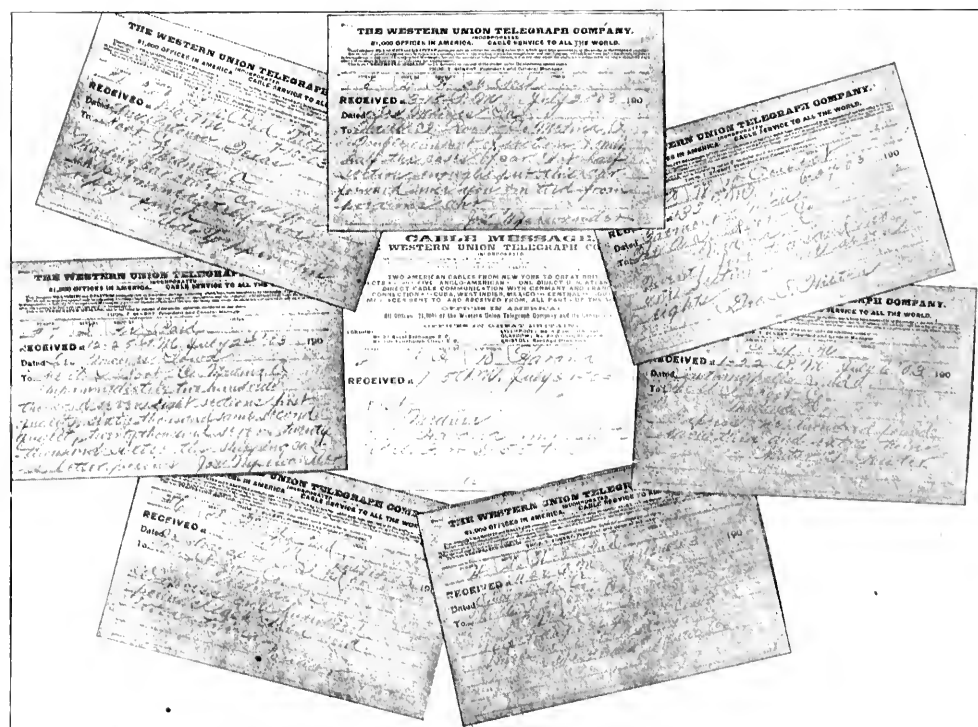
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W. Z. HUTCHINSON, Flint, Mich.

AN UNPRECEDENTED DEMAND

Proves the popularity of **Root's Goods**. With the approach of the Summer months we were planning an annual outing, overhauling of stock preparatory to inventorying, cutting down on time to 10 hours per day and laying off extra workmen, taken on during the busy season. Just at this juncture we began to receive a large number of unexpected orders. See these telegrams.



Did we cut down on time? No, we began instead to run some departments till 9:00 P. M. Have we taken our inventory? No, no one who can find the time. Have we millions of sections on hand? Sorry to say we haven't, but we have just caught up and now can give you nice fresh new stock and our dealers can give you prompt service. If you want the best and latest in bee supplies send your order to us or our agents.

THE A. I. ROOT CO.
MEDINA, OHIO.

OCTOBER, 1903



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Canadian Bee Journal.....	(1.00).....	1.75
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American Bee Keeper.....	(.50).....	1.40
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Farm Journal (Phila.).....	(.50).....	1.10
Rural New Yorker.....	(1.00).....	1.85
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WALKER-BREWSTER GROCER CO.,

Sept. 8. 423 Walnut St. Kansas City, Mo.

NEW YORK—Shipments have been more liberal during the past ten days, and much larger ones are expected in the next two or three weeks. We quote as follows:—Fancy white, 14 to 15c; No. 1 white, 12 to 14c; white extracted, 6 to 8c. Beeswax, 26 to 27c.

FRANCIS H. LEGGETT & CO.

Sept. 30. W. Broadway, Franklin & Varick Sts.

CINCINNATI—Comb and extracted honey are coming in freely and the demand is good, with steady prices. We are making sales at the following prices:—Amber extracted at 5¼ to 6½c; white clover extracted, 6½ to 7½c; fancy comb honey 15c. Beeswax 30c.

THE FRED W. MUTH CO.

Oct. 1 Cincinnati, Ohio.

BUFFALO—Honey is selling a good deal better and will sell still better as fruit gets out of the market. Moderate shipments will do well now. We quote as follows:—Fancy white, 14 to 15c; No. 1 white, 13 to 14c; fancy amber, 12 to 12½c; No. 1 amber, 10 to 11c; fancy dark, 8 to 9c; No. 1 dark, 7 to 8c. Beeswax, 25 to 33c.

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CHICAGO—Demand on comb and extracted honey is improving steadily and we encourage liberal shipments at the present time. This especially applies to comb honey. We quote as follows:—Fancy white, 14 to 14½c; No. 1 white, 13 to 14c; fancy amber, 12 to 13c; No. 1 amber, 10 to 11c; white extracted, 6 to 7c; amber extracted, 5 to 6c. Beeswax, 28 to 30c.

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NEW YORK—Good demand for comb honey of all grades with supplies rather light. We quote as follows:—Fancy white, 15c; No. 1 white, 14c; fancy amber, 12 to 13c; No. 1 amber, 12c; fancy dark, 11c; No. 1 dark, 10c; white, extracted, 7c to 7½c; amber, extracted, 6 to 6½c; dark, extracted, 5 to 5½c. Beeswax 28 to 29c.

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R. A. BURNETT & Co.,

Sept. 8. 163 So. Water St., Chicago, Illa.

Italian Queens.

Choice Golden untested, by return mail, 50c; tested, \$1.00.

J. F. MICHAEL, Winchester Ind.

6-03-67 R. F. D. No. 6.

Please mention the Review.

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W. Z. HUTCHINSON, Flint, Mich.

Six Per Cent Discount During the Month of October.

There is every evidence that there will be a heavy demand for goods the coming season; and if you defer placing your order until next February or March, you will not only lose your discount, but may have to wait for the filling of your order some weeks. Indeed, you can afford to borrow money, and get your goods now, thus having them all ready for next season's use.



Every Month You Wait, it Will Cost
You One Per Cent Per Month.

The styles of goods will be about the same for next season, so there is no use waiting for a new catalog. But remember prices have advanced, owing to the increased price of material; but if you

Take Advantage of Our Early-Order
Discount

You will not be paying much more for your goods than last year.
A word to the wise is sufficient.



THE A. I. ROOT CO.,
MEDINA, OHIO.

NOVEMBER, 1903



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KANSAS CITY, MO.—Market is only steady. Demand is good, but receipts are heavy. We quote as follows:—Fancy white, 12½c; No. 1 white, 11c; No. 1 amber, 10c; white extracted, 6½c; amber, 6c; beeswax, 30c.

WALKER-BREWSTER GROCER CO.,

Oct. 31. 423 Walnut St. Kansas City, Mo.

NEW YORK—The demand for regular grades of honey is normal, but prices are low. Light-colored stock is in good demand. We quote as follows:—Fancy white, 15c; No. 1 white, 12 to 13c; No. 1 amber, 10 to 12c; fancy dark, 11 to 12c; No. 1 dark, 10 to 11c; white extracted, 6½ to 8½c; beeswax, 25 to 27c.

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Marshfield
Mfg. Co., *Marshfield,*
Wis.

Five Per Cent Discount

DURING NOVEMBER.

Send for our list and order now.

Take advantage of this discount.

Have your goods on hand ready for use.

Just Think Of It!

If all of the sections we sold last season were placed unfolded in a straight line, the line would reach over Three Thousand and Five Hundred Miles.

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Marketing

Of honey is fully as important as its production. To produce a crop of honey cheaply, and to sell it to the best advantage, are distinct processes.

Whether honey should be sent to a distant market, whether sold outright or on commission, whether the home market can be profitably developed, whether the bee keeper should sell the honey himself, or employ some one, the peddling of honey, etc. are all thoroughly discussed in one of the chapters of "ADVANCED BEE CULTURE." Remember, too, that this is only one chapter out of 32.

Price of the book, 50 cts.; the Review one year and the book for \$1.25. Stamps taken, either U. S. or Canadian.

W. Z. HUTCHINSON, Flint, Mich.

A decorative border of stylized floral motifs surrounds the entire text of the advertisement.

Five Per Cent. Discount During the Month of November.

There is every evidence that there will be a heavy demand for goods the coming season; and if you defer placing your order until next February or March, you will not only lose your discount, but may have to wait for the filling of your order some weeks. Indeed, you can afford to borrow money, and get your goods now, thus having them all ready for next season's use.



**Every Month You Wait, it Will Cost
You One Per Cent. Per Month.**

The styles of goods will be about the same for next season, so there is no use waiting for a new catalog. But remember prices have advanced, owing to the increased price of material; but if you

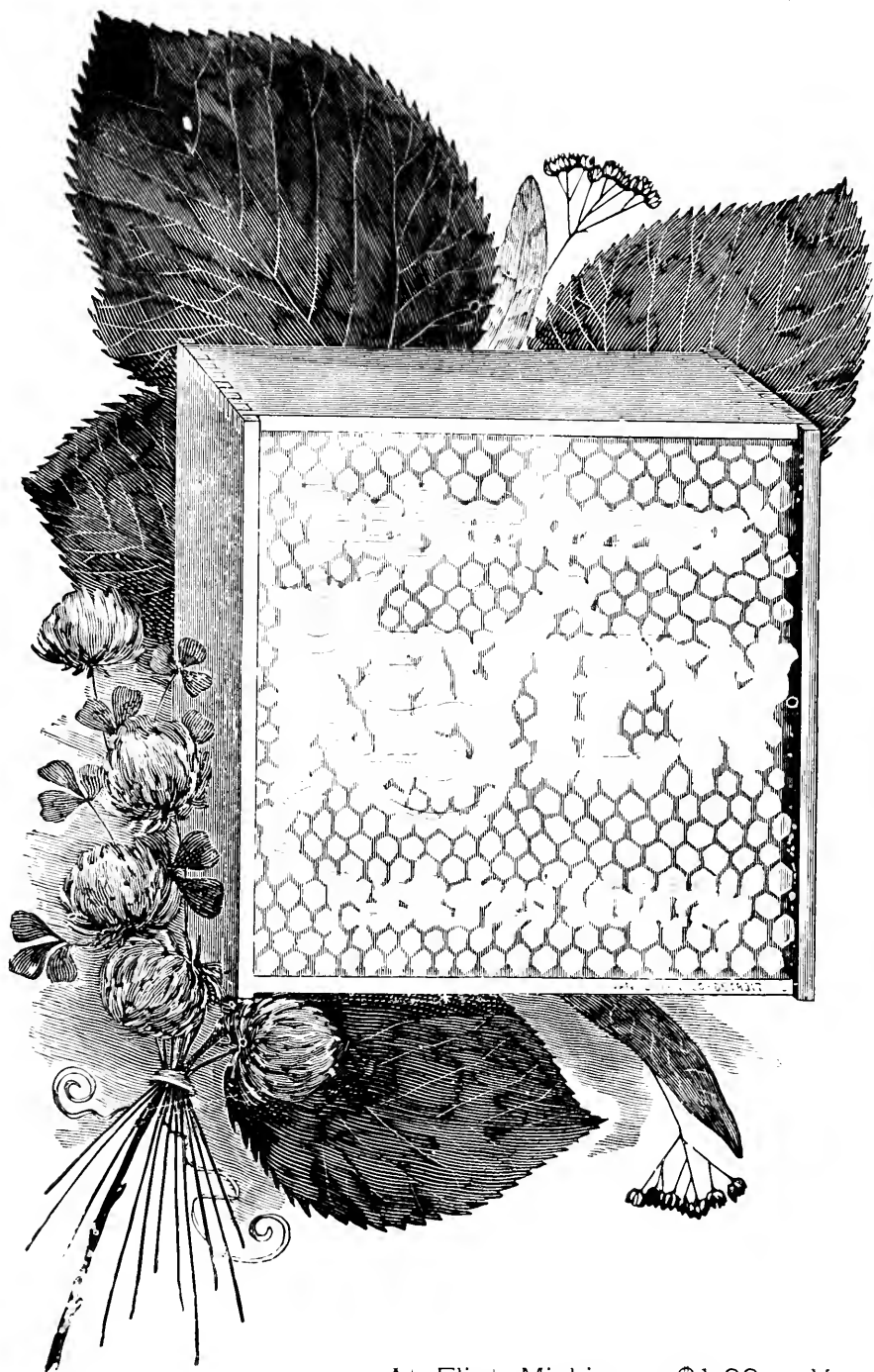
**Take Advantage of Our Early-Order
Discount**

You will not be paying much more for your goods than last year. A word to the wise is sufficient.



THE A. I. ROOT CO.,
MEDINA, OHIO

DECEMBER, 1903



At Flint, Michigan—\$1.00 a Year

ADVERTISING RATES.

All advertisements will be inserted at the rate of 15 cents per line, Nonpareil space, each insertion: 12 lines of Nonpareil space make 1 inch. Discounts will be given as follows

On 10 lines and upwards, 3 times, 5 per cent; 6 times, 15 per cent; 9 times, 25 per cent; 12 times, 35 per cent.

On 20 lines and upwards, 3 times, 10 per cent; 6 times, 20 per cent; 9 times, 30 per cent; 15 times, 40 per cent.

On 30 lines and upwards, 3 times, 20 per cent; 6 times, 30 per cent; 9 times, 40 per cent; 12 times, 50 per cent.

Clubbing List.

I will send the REVIEW with—

Gleanings, (new).....	(\$1.00).....	\$1.75
American Bee Journal.... (new) (1.00).....	1.75
Canadian Bee Journal.....	(1.00).....	1.75
Progressive Bee Keeper.....	(.50).....	1.35
American Bee Keeper.....	(.50).....	1.40
Ohio Farmer.....	(1.00).....	1.75
Farm Journal (Phila.).....	(.50).....	1.10
Rural New Yorker.....	(1.00).....	1.85
The Century.....	(4.00).....	4.50
Michigan Farmer.....	(1.00).....	1.65
Prairie Farmer.....	(1.00).....	1.75
American Agriculturist.....	(1.00).....	1.75
Country Gentleman.....	(2.50).....	3.15
Harper's Magazine.....	(4.00).....	4.10
Harper's Weekly.....	(4.00).....	4.20
Yonths' Companion (new) ...	(1.75).....	2.35
Cosmopolitan.....	(1.00).....	1.90
Success,.....	(1.00).....	1.75

Honey Quotations.

The following rules for grading honey were adopted by the North American Bee-Keepers' Association, at its Washington meeting, and, so far as possible, quotations are made according to these rules.

FANCY.—All sections to be well filled; combs straight, of even thickness, and firmly attached to all four sides; both wood and comb unsoiled by travel-stain, or otherwise; all the cells sealed except the row of cells next the wood.

No. 1.—All sections well filled, but combs uneven or crooked, detached at the bottom, or with but few cells unsealed; both wood and comb unsoiled by travel-stain or otherwise.

In addition to this the honey is to be classified according to color, using the terms white, amber and dark. That is, there will be "fancy white," "No. 1, dark," etc.

The prices given in the following quotations are those at which the dealers sell to the grocers. From these prices must be deducted freight, cartage and commission—the balance being sent to the shipper. Commission is ten per cent., except that a few dealers charge only five per cent. when a shipment sells for as much as one hundred dollars.

KANSAS CITY, MO.—Market firm with increased demand—supply limited. We quote as follows:—Fancy white, 13c; No. 1 white, 12 to 12½c; white extracted, 6½c; amber, 5½c; beeswax, 28c.

WALKER-BREWSTER GROCER CO.,

Dec. 1. 423 Walnut St. Kansas City, Mo

NEW YORK—Demand for honey of all kinds is good and the supply of most grades is also excellent. We quote as follows:—Fancy white, 14 15c; No. 1 white, 12 to 14c; No. 1 amber, 10c; fancy dark, 11 to 12c; No. 1 dark, 10 to 11c; white extracted, 6½ to 8½c; beeswax, 25 to 27c.

FRANCIS H. LEGGETT & CO.

Nov. 28. W. Broadway, Franklin & Varick Sts.

CINCINNATI—Comb and extracted honey are coming in freely and the demand is good, with steady prices. We are making sales at the following prices:—Amber extracted at 5½ to 6½c; white clover extracted, 6½ to 7½c; fancy comb honey 15c. Beeswax 30c.

THE FRED W. MUTH CO.

Oct. 1 Cincinnati, Ohio.

BUFFALO—There is a very good demand for all kinds honey, and we advise marketing now—right along. We quote as follows:—Fancy white, 14 to 15c; No. 1 white, 13 to 14c; fancy amber, 11 to 12c; No. 1 amber, 10c; fancy dark, 9 to 10c; beeswax, 25 to 30c.

BATTERSON & CO.

Dec. 1 159 Michigan St. Buffalo, N. Y.

CHICAGO—Sales are not up to what they were this time a year ago, but with colder weather we look to see trade on honey improve. Supply of honey more than exceeds the demand. Off-grades hard to move at any price. We quote as follows:—Fancy white, 13 to 14c; No. 1 white, 12 to 13c; white extracted, 6½ to 7c; amber extracted, 5½ to 6½c; beeswax, 29 to 31c.

S. T. FISH & CO.,

Nov. 28. 189 So. Water St., Chicago, Ills

NEW YORK—Demand is fair for all grades of comb honey. Supply is enough to fill orders, but the market is not overstocked. Beeswax dull. We quote as follows:—Fancy white, 14c; No. 1 white, 13c; fancy amber, 12c; No. 1 amber, 11c; fancy dark, 10c; No. 1 dark, 9 to 9½c; white, extracted, 6½c; amber, extracted, 6c; dark, extracted, 5½c; beeswax 28c.

HILDRETH & SEGELKEN,

265 & 267 Greenwich St., Cor. Murray St.
Nov. 30. New York.

CHICAGO—Honey is coming to market quite freely and is of first quality, this fact induces the trade to take it and people are of the opinion that it is going to be reasonable in price, two factors which go far toward marketing the product. Best grades of white comb sell at 14c; extracted 6½ to 7½c according to quality and package, amber grades, 5½ to 6½c. Beeswax 30c.

R. A. BURNETT & Co.,

Dec. 1. 199 So. Water St., Chicago, Ills.

Italian Queens.

Choice Golden untested, by return mail, 50c; teseted, \$1.00.

J. F. MICHAEL, Winchester Ind

6-03-64

R. F. D. No. 6.

Please mention the Review.

DADANT'S

Foundation

By the new **Weed Process** is made in the best manner, upon the best machines, and from the best wax—that free from dirt, pollen, propolis, burnt wax, etc., that decrease its tenacity and make it offensive to the bees. Every inch of foundation is guaranteed to be equal to the sample that will be sent upon application.

Langstroth on the Honey Bee, revised, Smokers, Tin Pails, Sections and other supplies. Send for circular.

Dadant & Son,
Hamilton, Ills.

Sections.

We make millions of them yearly; workmanship, smoothness and finish can't be better. The basswood grows right here. If you want some good **Shipping Cases**, you can get them of us. A full line of **Bee Supplies** on hand.

Write for illustrated catalogue and price list free.

Marshfield
Mfg. Co., *Marshfield, Wis.*

Four Per Cent Discount

DURING DECEMBER.

Send for our list and order now.

Take advantage of this discount.

Have your goods on hand ready for use.

Just Think Of It!

If all of the sections we sold last season were placed unfolded in a straight line, the line would reach over Three Thousand Five Hundred Miles.

G. B. Lewis Co.

BEE-KEEPERS' SUPPLIES.

Watertown, Wis. U. S. A.

Marketing

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W. Z. HUTCHINSON, Flint, Mich.

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